THE AMERICAN FARMER

ESTABLISHED 1819

NINTH SERIES. BALTIMORE, MD., OCTOBER 1, 1884. VOL. III.—No. 19.

Agriculture Abroad.

[By our correspondent in Paris, Sept. 6.]

PARIS, September 6.

French farming is passing through an evolution, the result of the terrible law of the struggle for life. For ten years the owners of small patches of ground, won by a lifetime's sweat of the brow, have been selling their little properties and becoming comfortable farm laborers, so that the miserable patches of land will be consolidated, worked with capital and directed by modern, scientific skill. So much for the soil.

The processes of farming are also being revolutionized. Leaving the culture of the vine and beet aside, the soil tends now to be appropriated to cereals, milk production, fruit and kitchen garden products. The first and third have been ever in favor, but are now being intensely pursued where natural circumstances either favor or compel. Milk industry, to which is joined the production of meat by precocious races of stock, is akin to an innovation. Indeed, it has been forced on French agriculturists by the severe competition in butter and cheese on the part of Northern Europe and the United States. It is every day becoming more difficult to get off stocks of butter from Normandy and Brittany, and old prices are still harder to obtain.

RESPECTING MILK FARMING,

to be successful, two conditions are essential—a proper race of cattle and suitable and sufficient food. France possesses some excellent local breeds of cattle, which, if the milch cows were selected for their specialty and crossed with a herd-book Durham bull, the result would soon repay the attention. In this amelioration of races the weak point with French breeders is that they rear the bulls resulting from these crossings instead of having them cut and converted into excellent oxen. And French agricultural societies are much to blame for admitting such mongrel bulls into competition. The tendency now is to cross selected local races with Durham blood. The Flemish cow unites most of the desired advantages.

Though the food may be liberal and good, if the cows be lean, they cannot yield milk rich either in butter or cheese. The renovation of the tissues of the animal economy prevents the secretion of milk. The food has also an important determining influence, and the kind of water supplied affects the flavor of the milk. It is to the latter circumstance that is attributed the objectionable quality of Dutch cheese.

Milk is a little heavier than water, and, when pure, of an opaque whiteness, possessing a milk flavor and a slight odor. Some question if it has a yellowish tinge. The milk of pure Jersey cows is decidedly yellow in color, and, like the Breton breed, is rich in butter. The Channel Islands cows are estimated to yield one pound of butter per day per animal. The density of milk varies then with the race, food, age and health of the animals.

Schubler says the milk of cows submitted to a good *regime* and house fed, contains in 1000 parts 24 of butter, 110 of cheese, 50 of skim milk, 77 of sugar of milk, albumen, lactic acid and mineral salts and 739 parts of water. Light-colored cows are popularly believed to be better milkers than dark maroon or reddish brown, but their milk is not so rich. Climate affects the yield of milk, as transpiration is greater. Thus the cows in the South of France are bad milkers, while the contrary is the case in the North. Cold is equally objectionable. The mountainous districts prove this, where the temperature, not the pasturage, is at fault. Neither young nor old cows give much or rich milk. They are in their prime after the third calving, or when four or five years old. Then the organs of secretion are developed. An animal cannot develop itself and yield a satisfactory supply of milk at the same time. Cows may remain profitable milkers till 12 years old. When aged from 6 to 8 and about six weeks after calving, a cow, if "spayed," will, it is alleged, secrete one-third more milk and uniformly for a longer time.

Cows fed on green or aqueous food will yield most milk. White clover tells handsomely on the quality of the butter. Then ranks natural meadow, superior to artificial, because containing a greater variety of grasses, and of an aromatic and condimentary character. Marshy forage is in every way detestable; chicory is bitter; madder colors the milk, while spergel tells well on the quality. De Weckherlin considers potatoes increase the quantity of the milk at the expense of its quality. Mangolds are satisfactory and carrots more so. There are dairy farmers who can command what price they please for their butter. Carrots and prime hay and white clover soiling, given not much at a feed but frequently, is the stage secret of their success. Grains and swill were formerly in more favor, but are considered to fatigue the digestive organs; cabbage and dry fodder are esteemed; artichoke leaves impart a bitter flavor, while pea pods communicate a peculiar taste to, while reducing the quantity of, milk. In the cheese factories the latter stuff is blamed for preventing the milk from curding. Oak and ash leaves mixed with forage are said to produce butter of a waxy, close-grained nature, possessing a nutty flavor.

In France and Italy the milk of a cow after calving is not considered to be in its normal state till ten days. At this stage it is called *colostrum*. It contains no capseine, turns rapidly, but does not acidify. It has been alleged the longer the milk remains in the udder the richer it will be. Hence the morning is superior to the evening milking. Wolff's experience does not confirm this. Milk may not only be bitter as a consequence of marshy fodder, but also from the animal's bile entering into the circulation, and so passing to the milk.

ASSOCIATED DAIRY FARMING

in France has to struggle with the legal difficulties which fetter the formation of co-operative societies. The system is destined to render important services to small farmers distant from centres of population, by economizing expenses. Pigs fattened on the small milk when it is not made into cheese, will suit many farmers. Pork so fed, with bran or meal added, ever meets with a remunerative sale.

ENSILAGE.

Nothing succeeds like success. Ensilage has hardly been founded as an essential to modern farming than attention was naturally devoted to the possibility of dispensing with costly trenches in masonry and machines for chaffing the green stuff. M. Cormouls-Houles and his brother have perfectly preserved green soiling in the open air. They reside at Mazamet (Tarn) and invite the St. Thomases to come and see. One brother, who had expended a little fortune in constructing trenches with cement linings, has now given them up for the simple open-air plan. This consists in stacking exclusively green fodder on a bedding of rough stones and on a dry site, covering the mass with a weight of 20 to 30 cwt. per cubic yard. The whole secret lies in this pressure. In the silos the crust of the mass to the depth of two inches is unfit for food. In the open-air stacking this thickness is doubled.

GRAINS.

In the brewing of barley only a very small percentage of the proteine or nitrogenous matter enters in dissolution. Of the fifteen parts of nitrogen contained in 1000 parts of barley nearly 10 parts remain in the "grains." After microscopic examination by Wolff and Kuhn, this is found due to the gluten, the cellules remaining intact. The great objection against grains was the great volume of water they contained. To remove this inconvenience an establishment has been erected at Munich for drying the grains by steam. This prevents their acidification and decomposition. In their natural state the grains contained 78 per cent. of water; when artificially dried but 20. The factory is only in work since January last. The proprietors guarantee that the dried stuff contains 26 per cent. of proteine and 42 of non-azotized matters, and the purchaser can have it analyzed at the government laboratory at the sellers' expense. It is contemplated to similarly dry beet pulp.

HARVEST OPERATIONS

are terminated under splendid weather. The yield of wheat will be very good—superior to 1883 but under that of 1882. The other cereals will be an average. The vintage and beet, the former especially, will be satisfactory. The recent rain has benefited both. As France has sufficient breadstuffs this year and the protection policy being in vigor by the government, a tax on foreign corn is contemplated.

BEET SUGAR.

France is behind Germany in the sugar industry. The latter has made the fortune of the Teutonic agriculturists, who can always count upon 17 to 18f. per ton for their sugar beet. But then the cultivation of the latter is not a half-and-half affair. The aim is sugar. The growers, also, to the extent of 80 per cent. of their number, are owners of the sugar mills on the principle of co-operation. The soil is rich, though light, and does not suffer either from excessive drought or humidity. Two horses suffice to work where in other countries four would be necessary. Then manual labor is cheap and not sparingly employed. Lignite or soft coal can almost be obtained from the surface of the soil. The difference between the sugar industry of Germany and France will be better comprehended from the fact that, while in the latter country it costs from 25 to 30f. to produce a beet rich by 12 to 14 per cent. of sugar, in Germany the combination is one-third less. In Germany, also, the roots are stored in pits containing 4 to 5 tons in the fields, and delivered at the factories *pro rata* to their wants. No farm-yard manure is employed—only chemical fertilizers—and the azote is in the dose of one part for every two of phosphoric acid, the nitric rather than the ammoniacal form being preferred. From 10 to 13 pounds of seed are allowed per acre. The rows are 16 inches asunder, so as to yield about 72,000 plants per acre. Eighteen to twenty tons is the return per acre. Manure for cereals and potatoes is applied in the compost form. Along the highways heaps of such are to be encountered in course of preparation. Not much wheat is cultivated. The same may be observed of oats. Rye and barley, the latter the Chevallier variety, are most in favor. The grains are sown in lines and well weeded. But little land is under forage. Rarely lucerne, clover or sainfoin are to be met with. Instead beans and peas are cultivated. There are also immense breadths of land under potatoes for cattle feeding and distillation. The borders of the highways are planted with cherry, apple and pear trees, and the sale of the fruits brings in a handsome revenue to the authorities, while securing work to the people. Dutch and Swiss cattle are preferred for house feeding, and the centrifugal creamer is in general use for butter farming. The Germans do not rear many barn-door fowl. The goose is the bird preferred. The food for stock is chaffed, crushed or cooked, and all scientific improvements eagerly adopted.

Hints on Wheat Culture.

As seeding is near at hand a few practical hints on this matter may not be out of place, especially to those new in the business.

Prepare the ground thoroughly by repeated harrowings, then roll, then drill, and then roll again. One of the lessons of every drouth is that thorough preparation alone insures success. Then don't neglect to roll your ground both before and after seeding.

In using phosphate use a high grade article and one that has proved a success in your own vicinity. If you want a cheap fertilizer get half a ton of the best and then add half a ton of plaster, mix the two together well and then you will have a better article than many of these cheap preparations that are now on the market.

In using manure for wheat I find best after two years' trial to spread the manure lightly, say 10 to 12 cords per acre and then use 200 lbs. of fertilizer in addition. The two act

together with the best results, stimulating in the fall, protecting during the winter, and carrying the plant by a healthy growth to produce a stout, strong stalk, that will be enabled to bear a large well developed ear. And after the wheat harvest, this manured soil will carry forward the timothy and clover even in the face of this drouth, so by the fall the ground will be fully occupied by these grasses.

I find after some years' trial, that the Longberry or improved Mediterranean has too weak a stalk, and when it will yield 25 to 30 bushels per acre, the improved Fultz, with the same treatment and soil, will produce from 30 to 38 bushels per acre. But if you change your seed, only do so after mature consideration.

One and a half bushels of good clean wheat is an abundance, and it should be put in not later than the 20th of October.

FRANCIS SANDERSON.

The Plains Farm, Balto. Co., Md.

DEW.

By B. PURYEAR, LL. D, Professor of Chemistry in Richmond College.

Dew has long been a favorite theme alike in the realm of fancy and of science. Poetry has characterized the dew drops, sparkling in the morning sun on grass and flower, as the tears which pitying angels shed upon a sorrowing earth. Science explains how and when and why the glittering spherules are deposited, and, in doing so, robs the subject of its sentimental and poetic interest. Abundant compensation, however, is made in the new features and added charms, with which science invests the subject. Nothing is simpler than the formation of dew. Indeed, we make it every day. A pitcher containing ice water soon has its outer surface coated with drops of water, and these little drops of water are really dew drops. What has happened? Only this: the chilled surface of the pitcher has robbed of its heat the aqueous vapor of the surrounding atmosphere, and so has condensed it into water. Dew is formed in nature in precisely the same way, the only difference being in the mode of obtaining chilled surfaces.

Let us see. The atmosphere is always charged, more or less, with aqueous vapor. The earth is always throwing off heat into free space by the process of radiation. During the day, however, the earth receives, as a general statement, more heat from the sun than it loses by radiation. Its temperature therefore rises during the day. At night, however, heat being lost by radiation, and none being received from the sun, the temperature of the earth's surface and of all bodies on the earth's surface sinks. Now the atmosphere brooding over surfaces thus chilled at night by radiation itself becomes chilled; and its aqueous vapor, losing heat, is deposited upon the chilled surfaces as water or dew.

What are some of the leading circumstances that modify the deposit of dew?

(1). The hygrometric condition of the atmosphere. When the atmosphere is saturated with aqueous vapor, then the slightest reduction of temperature will cause a deposit of dew; and the deposit will be very copious if there be a large reduction of temperature. Hence, as we walk out in the morning now, during the present distressing drought, we find but little dew on the grass. The explanation is obvious. The air is arid, and hence, though all other circumstances favorable to the formation of dew exist, the deposit is small. The material for forming dew—aqueous vapor—is scant and hence the scanty deposit of dew.

(2). We notice a remarkable difference in the amounts of dew deposited on different objects. When there is a moderate deposit of dew, some objects, as living vegetation, have quite a good supply, while other objects, as dead matter of every sort, have little or none. When the supply of dew is copious, we find the grass literally drenched with it, while there is largely less on the rocks and fences and dead vegetation. Those objects that need dew have a corresponding power of causing its deposit, while those that do not need it, show a corresponding lack of power. In other words, all objects have the inherent power of causing the aqueous deposit in the exact proportion of their wants, so that when the supply of dew is moderate, the whole or nearly the whole of it is deposited upon such objects as need it. Those that do not need the dew receive it only when the deposit is extremely copious, and nature can afford, as it were, to be prodigal in the bestowal of her gifts. Why this wonderful difference in the capacity of different bodies to cause the deposit of dew? A word explains. Different bodies lose heat very unequally by radiation, and of all bodies, that power is greatest in living vegetation. Grass and growing vegetation of every kind, losing heat by radiation much more rapidly than dead matter, suffer of course during the night a much greater reduction of temperature, and hence a correspondingly larger amount of dew is deposited upon them. But for exigent duty, we might stop to moralize on this beautiful and wonderful provision, which gives to every waving leaflet the power of abstracting from the atmosphere the water which it needs.

(3). Another circumstance which modifies the deposit of dew is the clearness and stillness of the atmosphere. Other things being equal, the deposit will be larger on clear than on cloudy nights. Why? When clouds overhang the earth, they reflect back the heat and so prevent its dispersion in free space Hence the sultry, stifled character of cloudy nights in hot weather. Heat being thrown back to the earth by the overhanging canopy of clouds, the earth and objects upon the earth are chilled but little, if at all, and hence the deposit of dew is small. Nor can the deposit be abundant unless the air be still. Consider a meadow of green grass rapidly radiating its heat into space during the clear, still night. The grass soon becomes chilled to the dew point and the deposit is made. But if the weather be windy, the air cannot brood over the chilled grass long enough to have its temperature reduced sufficiently for the condensation of the aqueous vapor of the atmosphere. Hence, on windy or cloudy nights, how favorable soever other circumstances may be, the deposit of dew is always small.

When frost, which is frozen dew, is threatened, the farmer, particularly the tobacco grower, is relieved of all his fears if at nightfall either a good breeze springs up, or clouds begin to form.

(*To be Continued*)

Rye.

Rye receives less care than any other grain. It is sown on the lightest soils without fertilizers of any kind. It will grow a crop every three or four years sufficient to pay for the labor expended, on soils so light that no turf is ever seen. It also stands out prominently among the successful methods of green manuring. For this purpose I consider rye second only to clover. Sown from September 1 to October 1, and turned under from the middle of May to the first week in June, it furnishes a large bulk of valuable fertilizing material during a period when most vegetation is dormant, and in season to be used for a crop of corn, tobacco, etc. I have raised the largest crop and best quality of tobacco on rye turned under the first week in June, when just heading out, and standing up to the horses' breasts. The land was in grass the year before, was mowed in June, turned over, and fodder corn drilled in the first of July; the drills being fertilized with wood ashes sown on the top, the fodder cut the last of September, and the rye sown immediately, without fertilizers.

Again, no crop responds to good treatment more quickly than rye. On soil so light that not more than eight bushels per acre would grow without manure, with ten two-horse loads of barn-yard manure spread evenly, the rye having been sown broadcast, and both harrowed in together, I have harvested over 20 bushels per acre of the nicest white rye, and three-fourths of a ton or more of straw. I have seen over 50 bushels of rye grown per acre, and a corresponing amount of straw. Being one of our surest crops, it is sown in out-of-the-way places, where scarcely any other crop would grow; hence so many acres afford small profit.

The grain is one of the cereals, making a bread much superior to that from the poorer grades of wheat. Mixed with corn and oats, it makes one of the best kinds of provender for cattle or horses, and for growing hogs, etc. Nor must one forget that rye straw is more valuable than hay. As a soiling crop, rye is the earliest of which I have any experience; that sown the first of September will be ready to cut the last of May, and I have been unable to see any difference in milk or butter production from those fed on any of the grasses. When mown before heading out, it will soon start again, and on rich ground it will produce a fair second crop for soiling or for grain. If sown so early as to have the grain stalks start in the fall, and judiciously fed off by sheep or calves, so that it does not spindle, it makes the finest pasture. Old, worn-out pastures can be quickly made new; by breaking them up in the fall, thoroughly harrowing, sowing to rye and grass-seed, they furnish the best of pastures the next season, and continue till the grass-seed takes possession of the ground again. If no grass-seed is sown with the rye, and it is not fed to death (as grass pastures are sometimes), it will flourish for years nearly equal to any of the grasses, and "the half has not been said" about that much-abused grain, rye.—*Cor. Rural New Yorker.*

Wheat and the Hessian Fly.

The insect known by the common name of Hessian fly is a widely distributed pest, and is sometimes so abundant over certain regions that farmers are compelled to abandon the cultivation of wheat. It has been known for over a century, and, while first discovered attacking wheat near this city, it is now found almost everywhere, from Maine to Kansas, and will probably, sooner or later, appear in all the wheat growing regions of the United States. As early as 1781 it almost totally destroyed the wheat crop in eastern Long Island and there has been scarcely a season since in which the insect has not appeared in some one or more places, seriously injuring the crop, and sometimes destroying the plants for several years in succession, and then suddenly disappearing as mysteriously as it came.

The Hessian fly is a two-winged insect, and belongs to a group of minute flies which are all more or less injurious to plants. There are several species known to be destructive to cultivated plants, but this wheat pest is probably the worst of the family. It is double-brooded, one brood appearing late in the summer, and the other early in the spring, but the summer or fall brood is generally the most destructive. The flies come in August and September, and deposit their eggs upon the young wheat plants very soon after they appear above ground. The eggs hatch in a week or ten days, and the grubs crawl down the leaf and feed upon the stalk, causing it to wither and die. The early spring brood attacks the wheat in the same way, but the plants often outgrow the injury at this season.

The presence of the Hessian fly in a wheat field is soon made apparent by the number of plants that turn yellow and die, and if these are examined the grubs, or the bright chestnut-colored pupæ which resembles a small flaxseed, will be found imbedded in the crown of the plant, or within the folds of the leaves. Various remedies and preventives have been tried, but all fail in some season while successful in others. Late sowing, or after the flies have been killed by frosts, is quite commonly practiced in the Northern States, and by many farmers is considered the best preventive. Entomologists who have closely studied the habits of this insect recommended late sowing, even at the risk of having the wheat injured by the frosts and cold of winter. In our more Northern States, wheat sown about September 20 will not usually appear above ground before October 1, at which time the flies will have mostly disappeared. Of course there are exceptions to this rule, and, if the weather happens to be very warm during September, the flies may live and deposit their eggs on the wheat plants in October, but they will not be very abundant. In the report of the "Ohio Agricultural Experimental Station" for 1883, we find the following very practical suggestions in regard to the best time for sowing winter wheat in order to escape the attacks of the fly:

"Winter wheat may be sowed too early in the season or it may be sowed too late, so there must be a certain time, neither too early nor too late. Many factors must be considered in designating the best time to sow. The condition of the soil, and exposure, the presence of the Hessian fly, and etc., must all be duly considered. The best time for sowing wheat in Central Ohio is from September 10 to September 30."

In a few instances very early sown wheat is reported to have been less injured by the fly than when sown in the intermediate or late season, and it is supposed that the reason of it was that while the fly attacked it, the plants were growing so rapidly that they escaped serious injury. But where early sown wheat has escaped only less injured than late, it may be considered as an exception to the rule, and where the fly is about farmers should put off sowing their winter wheat until there have been a few light frosts or at least utilize cool nights.—*N. Y. Sun.*

Country Roads.

A Western correspondent of the *Journal of Agriculture* makes the following recommendations on this subject, which are in the main applicable to other sections of country as well. He says:

How to make and keep in repair good country roads is a question both important and timely—important because of their constant use and timely because much labor and money are constantly being wasted by incompetent road overseers and by unmethodical plans of work.

It is true that no one system of road-making will answer equally well for all kinds of country—hilly or level, rocky or smooth—while in many localities the roads as now laid out are too narrow for any definite system of grading. Hence, temporary methods have to be resorted to. But while we cannot always have the conditions favorable, we can, at least, make the best possible use of our surroundings. Gravel or paved roads can only be made where the material is cheap and easily accessible, while corduroy roads are too expensive to be used where graded roads can be made. Therefore, these need not be considered here.

It is the graded dirt roads that I propose to discuss, because these constitute nearly the whole of our country system of roads. To commence work, we must have a sufficient width of ground to work on—say not less than forty feet. We must also have the

necessary tools, and it matters not for this discussion whether they be the plow and ordinary scraper or the improved grader. And here I would say, never commence to work on more road than can be thoroughly finished.

Then, with the road bed, the tools and the labor and teams at your command, go to work, continually bearing in mind that drainage is the one grand essential to a good road bed, without which no road made of loose dirt will remain firm. If, in making roads, we could secure thorough drainage of the beds, by ditching and tiling and lateral ditches or tiles as outlets, the work of repairing would be materially reduced. Drainage, where it can be done, should be both ways from a central point to a suitable outlet, which, of course, must always be lower than the plane. This is of first importance, because the height of the road bed must depend somewhat on the depth of the ditch necessary to secure the proper drainage. Grade the road up from both sides, but making the lateral slope as slight as possible; just enough to carry the rainfall into the gutters. The ditch should be the deepest and steepest on the side opposite the road-bed, for the reason that the wash should be against the bank, and not into the road. This process can be carried out, up or down grade, over hills or through ravines, with such modifications as the particular locality may require. After the road-bed has been thrown up, the next thing to do is to lay all necessary culverts. If the culverts are laid before the grading, you are apt to get them either too low or too high. And here I will say we use too few culverts. In every case where water is likely to stand on the side of the road a culvert should be used to carry the water to where it can get an outlet. As to the material for culverts, I would suggest large tiles as better and more durable than the wooden box in common use. If one tile is not large enough, lay several side by side, until enough is put down to carry off the waterfall. If the ditch be so steep as to cause a wash, the proper means should be used to prevent it, such as water bars, made of rock, boards, brush, straw or other material. If the road-bed is cloddy, use roller and harrow. If it needs leveling, a large square log, drawn up and down the road diagonally, with the rear end in the water way, is a good and expeditious way of leveling. Then, after the road-bed is leveled and packed, a wagon should be driven up and down several times, to lay out the track for travel and prevent crooked ruts.

The value of drainage is not confined to the road, but the lands adjacent are drained as well. If good graded roads were made, say on every section line, the cost per rod would just equal the number of acres in a township. Suppose, then, it costs thirty cents per rod to make a good graded and drained road-bed, who will say that the adjacent lands are not enhanced in value to the extent of thirty cents per acre? To keep roads in repair, the old adage, "A stitch in time saves nine," is as applicable here as elsewhere. If some one was employed to go over the roads once a month, at least, and repair all small breaks, instead of waiting until the roads become almost impassable as is generally done, much might be saved. So, also, might this be done by sowing blue grass seed on the road borders when a road is finished.

As this is, perhaps, long enough already, I close with the hope that the time may soon come when good roads may be the rule instead of the exception.

To KEEP machinery from rusting, take one ounce of camphor, dissolving it in one pound of melted lard; take off the scum and mix in as much fine black lead as will give it iron color. Clean the machinery and smear it with this mixture. After twenty-four hours rub clean with soft linen cloth.

The Curing of Indian Corn.

Well ripened Indian corn contains, as it comes from the field, from 15 to 40 per cent. moisture, the amount varying with the variety, soil and climate. But the drying of the corn does not stop with the harvest. Experience taught the farmer long before the chemist knew anything about it, that Indian corn must be exposed to free access of air for a considerable time after the harvest, else it quickly heats and is spoiled. This practice implies an excess of moisture and its gradual loss by exposure to air. As to just what this loss amounts to before the corn reaches an air dry condition, few observations have been made, at least not upon an extensive scale.

What costitutes a bushel of corn? The standard bushel of 56 lbs should contain about 50 lbs of absolutely dry matter. As ordinarily harvested it contains only about 42 lbs, or 75 per cent. A measured bushel at the time of harvest rarely reaches standard weight and therefore the amount of dry matter in it is still less than in a weighed bushel. For instance, it may weigh from 50 to 55 lbs, and removing the 25 per cent of moisture we have 37.5 to 41.3 lbs of the really valuable dry matter. Following are the results of our observations for three years. The weights are obtained from standard half bushels measured from the different lots at the times specified and not from the original half bushel weighed at the time of harvest, though they consist of almost exactly the same kernels:

	Weight of one bushel.			
	Harvest.	March	July.	Oct.
Crop of 1881,	54.7	53.7		55.5
Crop of 1882,	54.1	51.9	53 8	55.5
Crop of 1883,	53 1	52.4	53 6	

From these results it appears that a measured bushel of corn at the time of harvest is considerably below the standard in weight, that its deficiency is even greater in the following March and that it does not reach the standard until fully a year from the harvest. From these facts we may draw some practical deductions. Both buyer and seller should bear in mind that 50 lbs. of absolutely dry matter is the actual basis of a bushel of corn, and that to produce this requires from 56 to 70 lbs. of grain, according to the time that has elapsed since harvest; that a measured bushel of corn rarely contains 50 lbs. of dry matter until it has dried and cured a year.

Again, grain that has become thoroughly dried varies in weight with every change in weather and in transportation from one climate to another. Wheat raised in the dry valleys in the interior of California will sometimes gain as much as 25 per cent. in weight in transportation to Liverpool, simply by absorption of moisture while in storage at seaports and in the damp hold of the vessel; a gain of from 5 to 15 per cent. is almost a certainty and there is a covert understanding of this among dealers who regard this increase in transit as a legitimate source of profit. Prof. Brewer, in his elaborate census report on cereals, gives the result of some observations on grain subjected to the ordinary changes in temperature and moisture in his study at New Haven, for nearly two years. He found that corn varied in this way about 7 per cent. These are facts of great practical importance to the man who will avail himself of them. The price of corn by the carload is the same whether it contains 15 or 20 per cent of moisture, but the difference in actual value, reckoning 300 bushels of 56 lbs. as a carload, at 60 cts. per bushel, is $9, a sum which would repay the slight exercise of intelligence necessary to obtain it. There are plenty of other applications of the few facts which I have presented.

As to Mr. Bird's remarkable corn crop: His statement is deficient because he does not inform us upon what basis the 105 bushels per acre were calculated. If estimated at 56 lbs. per bushel, his figures are too large, for as I have shown, 56 lbs. of corn at harvest does not represent a true bushel; 65 pounds would have been a fairer estimate. This would have reduced his crop to 90½ bushels per acre, which, if we overlook his other methods of calculation, is still an unusually large crop.—*Cor. Farm and Home.*

Saving Seed Potatoes.

The farmer who waits until Spring before providing himself with seed potatoes for planting, has a decidedly poor chance for making a satisfactory crop. Seed from the bottom of a bin has its vitality more or less impaired. It is poor seed more than any other one cause that is responsible for poor potato crops. If seed has been preserved so that the eyes push out strong shoots, it is almost certain that there will be a fair crop of potatoes. With good soil and a favorable season, the crop will be a large one. In the very poorest fields of potatoes some hills will give a satisfactory yield. In the very best there will be more or less hills that are failures. This difference is mainly dependent on the seed.

The time to secure seed potatoes is before the main crop is gathered. Go through the field while the vines are yet green, and mark with stakes the hills that have strong-growing stalks. Then when ripe, dig these hills first, and after removing to the heap, assort them by selecting those of medium size and good shape, rejecting alike those that are very large or small or that have uneven surfaces. If this assortment is made from selected hills the seed thus secured will be worth far more than if selected from the entire field, after digging has been finished. A good-looking potato may come from a hill that has produced only one or two tubers.

The habit of unproductiveness will be seen in diminished yield the following year, though good soil and cultivation may partially modify this tendency.

The shape of a seed potato is of greater importance than its size. The potato is propagated from eyes or buds, and only in producing new varieties from the true seed. Each plant is, therefore, a continuation of that of the previous year from which the bud was taken. It retains the characteristics of the parent, not only in variety, but as to shape, habit of growth and productiveness. Some of the most valuable varieties have been grown by careful selection of seed potatoes. Varieties thus formed are said by farmers to "run out" more quickly; but this is probably because the carefulness in selecting the seed is not kept up to the original standard. I know some farmers who have successfully grown the Early Rose until now. With the great majority of growers this variety became unproductive several years ago.

One of the enemies of the potato grower is blight, which causes premature dying of the vine before the tubers are ripened. Of course such potatoes never fully ripen, though the blight may come so late that they are large enough to market. These blighted potatoes are poor enough for any purpose, but they are absolutely unfit for use as seed. I do not know that blight will certainly follow planting such potatoes. In fact, there will not usually be enough top to blight. The thin, spindling hills to be seen in nearly every potato field are the result of using this poor seed.

Potatoes intended for seed should, after digging, be exposed as much as possible to light until danger from frosts requires their removal to the cellar or pit. If they could be kept in a light room up stairs at a uniform temperature of 40° through the winter, it would be better than any other course that can be devised. Cellars are usually kept too warm, and they are always too dark for this purpose. Long before time for planting, the early kinds of potatoes will need sprouting, and when the first sprout from an eye is removed, any that come after that will be much less vigorous. For storing on a large scale, dry pits, well covered with earth, secure the most nearly uniform temperature, but potatoes thus kept should be taken up two to four weeks before planting and spread thinly in a dry room where the sunshine can dry them out and start the eyes.

A potato that has been greened in the sun is spoiled for eating; but for seed it is all the better. Such potatoes will be from a week to ten days earlier than others of same variety planted at the same time. With late varieties they will produce a larger crop, as the growth will be more vigorous on the same kind of land. This secret of exposing potatoes to sunshine for a time before planting has been worth fortunes to the potato growers who learned it. It may be done with the hills selected for seed by partly uncovering the potatoes while still attached to the roots, taking care that it be done in not very hot weather, and that potatoes so exposed be dug before danger from frost.

Potatoes for seed should not be bruised nor handled roughly at any time. A cut will dry out better than a bruise; but whether cut or otherwise injured, they should be left spread thinly until the dying process is completed. All this will not be thought too great trouble by the careful potato grower, who knows that upon the character of his seed will depend the value of a crop which, for the area it occupies, brings him more money than any other that he can produce. At the same time it is true that more than half the potatoes grown in the country are sold at a loss, mainly because those who grow them do not understand the conditions for profitable culture of this crop. We are getting too much in the habit of looking to six or eight localities in the United States for the supply of the potato market. It is not that other places cannot grow them successfully, but the farmers of the potato-growing localities have made this crop a specialty, and have learned how to secure a profitable return nearly every season.—*Cor. Am. Cultivator.*

An Agricultural Experiment Station, Not in Maryland.

Last winter when the effort was being made to secure for Maryland the great advantage of a well conducted Agricultural Experiment Station (which effort failed more from the apathy, or hostility of many of those who ought to have favored it than from any other reason) many persons seemed to suppose that the only purpose for which such a Station was desired by its promoters, was for the chemical analysis of commercial fertilizers. While this is of course one of the important duties of an Experimental Station it is very far from being all, or even the most important part of them. In many states where these stations have been established, their direction has fallen into the hands of men trained in the laboratory, whose labors, skillful as they have been in their special work, have tended to give these stations the character of mere analytical laboratories. Their reports are altogether too scientific for the average tiller of the soil to take any interest in, and the comparative money value of different fertilizers according to their standards are so often reversed by the practical tests of the field that farmers are losing confidence in mere laboratory work, unsupported and supplemented by accurate experiments in field culture.

The most notable exception among these stations, to the foregoing conditions, is the station established nearly three years ago by the State of New York. This station has been peculiarly fortunate in being placed under the control of a man who seems to be capable of comprehending fully the needs of the agriculture of his state, and possessed of the practical knowledge and experience necessary for carrying out the work before him. The patience, the capacity for details and the executive ability required for such a

position are seldom found in a man whose whole training has been in the cloistered seclusion of a laboratory. I have never had the pleasure of meeting Dr. Sturtevant, but from the published reports of his work, am satisfied that he is one of the men who have found their proper work, and is doing it manfully and in a good common sense way, that the mass of his fellow workers in the soil can fully understand and approve. I am led to make these remarks from reading in the *Country Gentlemen* for September 25th, a review of Dr. Sturtevant's report for the year 1883. Those who imagine that the work of an Agricultural Experiment Station begins and ends in a chemical laboratory, would probably be astounded at the vast scope and minute details of the experimental work entered into at the New York Station, and the practical unbiased way in which the final results are worked out. Too many of our amateur experimenters start out with a pre-conceived theory and experiment solely with a view of proving their theory, a very different thing for a patient investigation after the truth, with out regard to any pre-conceived notions. We are told that this report for 1883 includes "a statement of the general plan of operations; an enumeration of the results reached by experiments; various results with many varieties of corn; experiments with vegetables; testing the germinating power of commercial seeds, and of seeds of different ages; the relations of feed to milk, with tests on several cows; analysis of food given them; experiments with cutting the seed, and in cultivating potatoes; the influence of weeds on crops; the analysis by the chemist of food, milk, sugar, fertilizers, &c. And a detailed account of the operations of the horticulturist in planting and cultivating a large number of different varieties of vegetables, with descriptions and classification of several hundred sorts."

Further experiments in selecting seed corn from different parts of the ear show that the results of Dr. Sturtevant's first experiments in this direction were erroneous, and that there "is no material difference in the crops obtained from grains taken on different parts of the ear."

A single experiment showed that "no advantage was gained by frequent cultivation of corn over uncultivated from which the weeds were removed, and in most instances the product was reduced by cultivation from five to fifteen per cent." But this it is remarked was probably owing to the packing of the soil incident to cultivation in a wet season. This result will doubtless be reversed in a dry season. While criticizing the extreme minuteness of detail in many of the experiments the reveiw says, "taken as a whole, however, this report of the station furnishes a large amount of valuable information, which could not be obtained by private or individual labor; and disseminated among farmers it will be worth many times its cost. No better expenditure of public money could be made than the comparatively small amount required to sustain its operations."

This is the verdict of one of the leading agricultural papers of the country upon the results of two years work of a properly conducted Experiment Station. And yet the politicians of Maryland, aided by some who call themselves farmers, refused the agriculture of our state the trifle asked to start such a station here. Perhaps after the funeral of the so called Agricultural (!) College is over, the Legislature may be induced to do something that will be of value to the farmers of our state, but while this great corpse is above ground, it will continue to be an excuse for doing nothing for our agriculture.

BALTIMORE COUNTY.

[We have little doubt that succeeding Legislatures will recognize the demand of our farmers for a Station.—EDS.]

Live Stock.

The Model Farm-Horse.

Ours is an age of intense progression, and that progression is particularly intensified in America. We are a nation of workers. Neither night nor day, neither youth nor old age, neither poverty nor affluence circumscribes our unceasing energy to labor. It has been very well said that very few Americans know how to live, for they have only one portion in life, namely, all work and no play. We are always in a hurry—hurry to eat, in order that we may hurry again to our never finished work. Work robs us of digestion and deprives us of recuperative sleep. The old-fashioned methods of farming were too slow, so that we have called into requisition the combined energies of steam and machinery to hasten the labors of seed time and harvest. When, therefore, intelligent attention is paid to the breeding of the model American farm horse, two elements will be absolutely prerequisites. We mean speed and power. He must be able to haul enormous burdens, and he must be ambitious to walk off with them at a brisk pace that would astonish the old-time farmers, whose horses imitate, in their movements, the pausing motion of yoked oxen. If the horse is a fast walker he will necessarily prove to be a brisk trotter, that is, he will move with energy and eagerness up to the limit of his trotting speed. In order to possess power, it is unnecessary to encumber him with the unwieldly frame and tremendous weight of the heavy draft horse. Seventeen or eighteen hands in height, and two thousand pounds in weight, means slow, heavy, elephantine tread, not in harmony with the rush and push of American civilization. All these classes of ponderous horses, like the Norman, the Clydesdale, and the English draft horse, that have been so numerously imported to this country, will answer valuable purposes by judicious crossing. They will become necessary factors in the evolution of the American farm-horse. They will contribute height and weight, and the inherited ambition to overcome great burdens. But, unassisted by our own strains of blood, they could never produce the model farm-horse. Their weight and slowness of motion would never bring them into general use for long journeys or transportation, where quick transit is a desideratum.—*National Live-Stock Journal.*

How to Begin Keeping Sheep.

The time to go into a business is when a good many persons are getting out of it. This applies especially to sheep keeping. I am not very old, but I can remember several ups and downs in this business; but the downs only last a short time, and everything gets lovely again very soon. The golden fleece becomes tarnished for a while, but it soon brightens again, and gets as bright and brilliant as ever. Just now sheep are down. Good store ewes are selling in the markets, and can be picked out of droves for $2.50 to $4 a head, which may be made to bring a lamb next spring worth more than the cost of the dam, and give a fleece that will pay for their keep, and so stand their owners next summer just nothing at all. This is not bad for a time when a good many sheep owners are wild to get rid of their sheep, and go into something else not half so good. It is thus very clear that this is a good time to begin to keep a flock. This season of the year is the very best, because it will soon be the breeding time, and one can make suitable arrangements for the next year's lambs. I have now several letters before me from readers of the *Country Gentleman*, asking for information on special points, which I will try to cover as concisely as possible.

The first necessary is the farm. For it is not every farm that is suitable for sheep, although but few are altogether unsuitable. Rolling, and even hilly land is the most desirable surface, and limestone gravel that is dry and free from swamps or low wet places is the best soil. Clear running water that is wholly free from marshy banks or borders, or well water, which is preferable, is indispensable, because wherever there are low wet places, there the much to be dreaded liver fluke and the lung worm are to be found, with lung disorders and foot rot; and these are more troublesome than all the other complaints of sheep put together. The great needs of sheep are dry footing; good grass, or other herbage, rather short and sweet than rich and luxuriant; pure water, pure air, and plenty of it, and shelter from rains and snows. With these needed comforts, and close watching to avoid accidents and dogs, sheep will always belie the old Virginian adage that "they are an unhappy flock," and will pay their way better than any other farm stock.

The second necessary is the master, and he who would keep sheep with pleasure and profit must be patient and persevering; careful, thoughtful and watchful; apt to learn, and prompt to apply what he learns, and endowed with good common sense and foresightedness. More sheep go to the bad because of a neglectful owner, or one whose temper is cross and who scorns little details, than for any other reason. It is very true that "the good shepherd loves his sheep, and is loved by them," because such a man is thoughtful and considerate of their welfare in every possible way. A man who ever feels like the irascible old Virginian, John Randolph, who said he would go a mile to kick a sheep, should never have anything to do with them; because at first his patience will be tried, perhaps sorely, from unavoidable mistakes leading to accidents, and these are to be taken as they come, and the blame put where it belongs, on the owner, and not upon the sheep, which are as nature made them, and cannot be changed, but must be treated precisely as their natural peculiarities require. Such a man, with such a farm, or one that can be made so, or near it, may get a flock and hope to do well with it. If he fails in some things at first, he will soon learn by experience and succeed.

The third necessary is, to secure a good lot of sheep to start with, and not too many at first. It is always easy to increase the number when one is ready, but not so easy to get rid of a surplus when the excessive number has got the owner into trouble. Fifty ewes and two rams will make a good start. Above all things, pure-bred ewes should be avoided. They are more exacting than the native grades; they cost several times as much money; the fleece is rarely worth more than that of common sheep, and the lambs are worth no more than those of half-bred sheep. But pure-bred rams are indispensable. For market lambs, the black-faced breeds furnish the best sires. Shropshires, I think, come first, because they are the hardiest; Hampshires are next, because if the owner is very careful in managing his flock, the lambs are larger; Southdowns come next, because the lambs are rather small, and the fleeces are lighter than those of the other two. But any one of these rams will produce good lambs for the market, and good sheep for wool and mutton. Half-bred Southdown mutton is the best in quality, although not quite so large in carcas as either of the others. The long-wool breeds are not so hardy as the black-faced breeds, and are harder feeders. The ewes should be two or three years old, and no more.

The age of sheep is easily known by examining the front teeth. A two-year-old sheep has four permanent front teeth in the lower jaw; these teeth are easily distinguished from the temporary teeth, being broader and larger. A three-year-old has six of these teeth, the last two appearing during the fourth year. In some of the pure-bred sheep, which mature early, the whole eight permanent front teeth appear at about three years of age, and generally these sheep are a few months earlier in their teething than the native sheep or the grade mixed Merinos. When a ewe has the whole eight permanent front teeth, she is at least four years old, or a little less; but then the teeth are sharp and clean, and no sheep older than this should be chosen. Older sheep will have the teeth worn and discolored, but some sheep of Merino crosses keep their teeth for many years, and unless grazed on sandy land or bare fields, may have good teeth at eight to ten years old, and be really profitable even to this age. But such sheep are not very numerous. The rams should be yearlings; that is, in their second year. If the ewes are robust and in good health and condition, there will be more twin lambs with rams not over two years old, than with rams that are older than the sheep. A heavy-fleeced but small ram, as a rule, will be a better sire than a larger one with a light poor fleece. The ram should be well built, broad on the back, with a small head, but broad between the eyes, and should have a bright clear eye. His teeth should be clean and white, and quite free from discolorations, which indicate poor health and constitution. The ewes should be long and deep-bodied, broad-hipped and short-legged. A clear eye, quite free from yellow tinge, and a pink clear skin, indicate good sound health. It is best to have them well wooled on the belly, where many are too light. It is better to pay a dollar more per head and have good ones, although a few less, than more and poorer ones, although cheaper. There will be many chances, if one looks out to buy ewes from passing droves at one's own gate. But where a large market is near by, or within easy reach by railroad, it will be preferable to go there and have a better and more deliberate selection. In such a case it would be well to pay an expert a moderate fee, or take an experienced neighbor to make a selection.—*Henry Stewart, in Co. Gentleman.*

Fattening the Pigs.

This work should not be delayed too long. In fact the pigs should be kept on a gradual gain all through the season. Fattening does not mean taking out of the pasture and shutting up in a close, hot pen. Some men have an idea that a pig cannot be fattened in any other way, but this stand has been proved untenable time and again.

There is no way in which pork can be so quickly and cheaply produced as upon a partially green diet, which the animals gain through the wholesome exercise of picking from the pastures themselves. To be sure they need a good portion of more solid food of some kind. Corn, probably, is the most available for this purpose, although it is not an economical food if given in the ear. Animals that are upon grass, should have their feed ground or cooked, or a large portion of it will pass through them undigested.

The healthiest pork cannot be obtained from a clear feed of dry corn. The digestive organs of the animal so fed are sure to get out of order upon so heating a food, and thus the whole system becomes tainted and impure. A partial diet of green feed, and the exercise of getting it from the pasture will keep the animal in good thrifty condition. Rotten vegetables and foul slops may be eaten by hogs that have never known any other food, but that is no sign that it is better for them than clean, wholesome food, as many attempt to argue.

Above all things we should get out of the notion that clear, dry corn is the only food that will fatten hogs, and make good meat. It is very handy to toss over a few bushels of ears two or three times a day, but it is certainly a very expensive food, and so heating in its nature that it should never form

the sole diet of any animal. We would not dare feed our horses or cows with such food, but we have fallen into the habit of feeding our hogs in this way, without reasoning the matter or doubting the efficiency of the method in the least.—*Cor. Indiana Farmer.*

Sale of Short-Horns.

A telegram from Flat Creek, Ky., states that on Wednesday, the opening day of Hamilton Short-horn sale, Colonel Judy bought Young Mary Duchess for $1,225; 3d Duchess of Kent was sold to Williams & Hamilton at $5,000; two-months' calf 10th Duchess of Kent at $1,600 to Palmer & Bowman Saltville, Va.; Barrington Lady 10th, $3,500, to Williams & Hamilton; Barrington Lady -th, five months' calf, $1,600, to John Montgomery & Son, Granville, O.; Barrington Lady 6th, $3,000 to Williams & Hamilton; Barrington Lady 7th, $1,300, to A. L. Hamilton, Lexington, Ky.; imp. Barrington Lady, $1,550, to A. L. Hamilton. Fifty animals, several of them young calves, sold for $35,980, averaging $719.60.

The Dairy.

Rule for Testing Jersey Cows.

Below we give the proposed amendments to the By-Laws of the American Jersey Cattle Club, passed by the Board of Directors and submitted to the Club for approval. If confirmed by the vote of the Club to be called Article VI:

1. A book shall be kept by the Secretary, to be known as "The Official Butter Test Book," in which all tests heretofore made by an appointee of the Club, or which shall hereafter be made by the Club, shall be entered.

2. The Executive Committee of the Board of Directors shall, as soon as possible, appoint testers for each State, Territory or Province, to conduct tests on behalf of the Club, who may be removed at any time by a majority of the Board of Directors.

3. Any person making application for a test by the Club shall bear all the cost thereof, which must be fully paid before the same is entered in "The Official Butter Test Book," or reported; and upon application a deposit of $50 shall be made to apply toward the cost of the test and the publication of the result of the same.

4. Upon such application with such deposit the President of the Club shall appoint a committee from among the approved testers to be appointed under Sec. 2, or any member of the Club, or any expert (whether resident in the State, Territory or Province, or not), at his option.

5. Such committee shall be paid by the Club $5 per day for each day he is necessarily engaged in conducting such test, as also his traveling expenses to and from the place where the test is to be conducted.

6. Under no circumstances shall any payment or gratuity to the tester be made or permitted from or by the owner of the cow, or any one interested in her, and any violation hereof shall invalidate the test.

7. The following rules shall be followed in every test:

(a). The committee shall see the cow completely milked out 12 hours before the next succeeding milking.

(b). The committee shall be present at each milking throughout the entire test and must see the milk weighed and keep accurate records of the net weight of each milking and time of milking.

(c). Immediately upon the milk being weighed the committee must see the milk securely placed under lock and seal. In case a creamer is used the committee must securely lock the creamer containing the milk with a padlock, to be provided by such committee, and must seal the same by passing a ribbon or band of tape around the creamer, and sealing such tape or band with a seal, not furnished by the owner. In case the milk is set in pans or crocks, the room in which it is set must be securely locked by the committee, and the doors and windows thereto sealed.

(d). The committee must be present at the drawing off of the cream, and must retain it securely with the same precautions as are set out in last preceding section.

(e). When the owner of the cow considers the cream or whole milk ripe for churning, the committee must see the cream or whole milk placed in the churn and remain until it is churned, thoroughly worked, salted, reworked and reweighed; he shall weigh the butter before salting, and after being salted and reworked. In salting, one ounce of salt to every pound of butter shall be used, the tester keeping a record and reporting to the club the temperature at which the cream or whole milk was churned, and length of time required in churning; the quantity of butter with which the cows shall be credited shall be salted butter ready for market.

(f). The committee shall report, as nearly as possible, the quantity in weight and composition of the food given the cow during her test, but the feeding of the cow and the quantity of feed given, shall be left to the judgment of the owner.

(g). Two milkings only per day shall be made, unless the cow is incommoded thereby.

8. The report of the committee shall be retained by the Club as a permanent record, and the quantity of butter made by such cow shall be entered in "The Official Butter Test Book." No tests shall be made for a shorter period than seven consecutive days.

9. In the issue of any herd register hereafter to be published by the Club, in case the dam is reported in "The Official Test Book," her butter record in pounds and ounces shall be added after her herd book number, or in a foot note, wherever her name appears.

How to Make Good Milkers.

No matter what breed you have, something further is necessary in order to reach the best success in raising good milkers. Good blood, whether Short-Horn, Jersey, Devon, Ayrshire, grade or native, is not everything, but lies at the foundation; something cannot come from nothing. Treatment in raising a milker should be somewhat different from that in raising a beef animal, or an animal for labor. Begin as soon as the calf is a day old; see that it has sufficient to eat, and is kindly treated and regularly attended to. Never pamper or over-feed, but give it good, generous food, to cause a regular early and steady growth. Accustom it to be handled, but not to such an extent as to acquire objectionable habits as a cow, but rather to be fond of the presence of the keeper. Kindness helps to create a quiet disposition, so important in a dairy cow, and this education must begin when the calf is young—any habits acquired when young are apt to cling to the cow when grown.

For a milker I would have the heifer come in at two years old. She is then old enough to become a cow. I would not, as a rule, allow her to go farrow, but milk her up to within a few weeks of calving, even if I did not obtain but little at a milking. A cow thus trained will give more milk and be more likely to hold out long in milk, if her after care is judicious and liberal, as it should be. Such treatment tends to form the habit of giving milk, and, as we know, habit is a sort of second nature. Couple the heifer with an older bull, one two or three years older than she is, if preferable to a yearling, and better stock is likely to come from such. After the heifer has come in, her feed should be regular and liberal. Good clover hay is the best of all, but we all may not have this for stall feed; then we must make up for what is lacking in some concentrated feed such as oat meal, shorts, oil meal or the like, but great care and and good judgment must be used not to overfeed or crowd as the future cow may be ruined. Undue forcing shortens the useful life of the cow very rapidly. W. H. White in *Country Gent.*

Notes on Cream Setting.

In the course of his investigations on the various systems of creaming Prof. Ford found in regard to the ordinary methods of cream setting.

1. Shaking of the milk before setting is detrimental to a rapid separation of the cream.

Of two samples of milk, one being shaken before set aside, the latter required eight hours to separate seven per cent. of cream, the time required by the other to separate the same quantity being only three hours.

2. Premature cooling of the milk before setting is more serious in its effect on a thorough separation than the first mentioned point.

When milk conveyed to a creamery in a common vehicle, by centrifugal separation gave 100 pounds of butter, a sample of milk of the same quantity and quality, conveyed in the same manner and set in ice water gave 90.8 pounds, while another sample that had been cooled, transported as before and then set in ice water gave only 87.9 pounds

As a general rule Prof. Ford found that the yield of butter grew less the lower the temperature of the milk had been before setting.

When milk set in ice water directly after milking gave 100 pounds, milk that had been previously cooled to

68° gave.....95.7 pounds.
54° gave.....91.0 pounds.
48° gave.....86.3 pounds.

A means of restoring the original qualities of such milk was found in warming the milk to about 104° before setting.

3. Circulation in the milk during the setting caused by differences of temperature between the milk and surrounding medium tends to delay the progress of separation.

A quantity of milk of 81° was set in a bucket of ice water. After

	½ hours.		2 hours.		6 hours.	
	A	B	A	B	A	B
Temp. in sur.	64.4°	64.8°	60°	44.8°	41°	37.4°
Temp. in mid.	66.1	56.5	45.3	42.4	36.3	34.5
Temp. near b.t	41 5	39.4	34.9	34.5	32.7	32.5

(A in the middle of the vessel; B near the walls.)

During the whole time there was a continuous circulation in the milk and the separation of the cream could not go on undisturbed before after the expiration of about six hours.

Specks in the Butter.

A subscriber to *Farm and Home* asks the following question:

What causes white curds or specks in my butter? I never was troubled with them before. We thought at first we were milking a grade Jersey too long, she being within four weeks of calving. We stopped milking her, but still the trouble continued. The lumps are from the size of a pea down to a pin head. Some are in flakes that float. The lumps are harder than the butter and white. I wash my butter sometimes in seven different waters and when I have succeeded in getting them out the butter shines and is of first quality and gets a good deal of praise, but oh! the bother of so much washing.

The reply is given as below:

Specks in butter are of several kinds—caseine, dry cream, clots of sour cream, and flakes, which I place as cooked cream, occasioned by scalding milk at too high a temperature. That these lumps float and are white, shows that they are of cheesey composition, caseine being white, and they had developed gas enough to float them. That they disappear at the seventh washing, proves it; for water will dissolve uncooked caseine, but will not butter fats. This character of specks are most likely developed by setting the milk in a room too warm, and the cream is allowed to remain on the milk too long. The milk which is always found in cream becomes acid, and when put into the warm pot to sour, these particles take on a ferment, by developing carbonic acid, and by the adhesion of other milk particles, becomes a speck of curd.

A very easy way to tell whether the specks are dried cream or sour milk, is to dissolve some of the cream in water, stirring as little as possible. If they are sour milk specks they will in time go to the bottom, where they will be found by carefully pouring off the water. If dry cream, they will still float. Then the remedy presents itself, of skimming as soon as the cream is all up, and before the milk sours. Frequent stirring of the cream to promote ripening, as distuingished from souring, is recommended. Churn at not over 60°, and thoroughly wash with brine. All of these points are in the way of betterments in buttermaking, and if learned and persisted in lessen the labor of manufacture and enhance the quality.

Churning at too high a temperature will develop specks, for heat above a certain point increase the adhesive tendency of caseine to attach itself to the butter globules, and this may form into a center about which cheesey matter may collect.

Churning very thick cream will cause specks. There is not fluid enough to give the cream proper motion. The solid particles of cream remain unbroken and unchurned. If the butter is gathered in the churn, instead of being washed out, these specks remain. The best remedy for this is a skimmer without holes. If the cream is taken up with considerable milk, and churned before the milk becomes thickened, the agitation of the cream is promoted, and a more complete method adopted, for the layer of milk next beneath the cream is rich in butter fats and is certainly worth securing, aside from its value in butter churning.

Scalding milk or cream is a profolic source of specks. When we scald milk a thick wrinkly coating rises, which is not cream, because cream can only rise when the temperature of the milk is falling to produce a difference in the gravity between serums and fats. Hence, it is settled that the scum in scalded milk is caseine. This the cream afterward absorbs when it does rise, and the specks are very likely to be this cooked caseine. If cream or milk must be scalded the only proper way is not to heat it to the usual high scalding point and to stir it while heating, so that this separation cannot take place. Heat causes caseine in milk to become lighter than fats, and cream cannot rise until the cooling process has reduced the temperature of the milk below the point of natural animal heat.

There is yet another notion, that the cow gives these specks along with the milk, and that no change in manufacture will remedy the trouble. If this is so, it would most likely be caused by the cow not properly digesting and assimilating her food, which would find a remedy in feeding her a small handful of fine wood ashes and salt for a week or so, and then occasionally. The potash and mineral matter in the ashes would restore the full power of digestion.

To sum up the whole matter: I would suggest feeding oatmeal as a part of the grain ration. Keep the milk room as near 60° as possible. Skim pretty deep, and while the milk is sweet, stir the cream frequently until a mild acidity is observable. Churn at 60°. Wash out the buttermilk with weak brine. Salt three-fourths of an ounce to the pound. Work over and pack within two hours from churning.

Beet Sugar.—According to *The Sugar Beet*, 90,000,000 pounds of beet-sugar from European countries entered our ports last year. This, it states, is "about eighty times more than the combined efforts of the sorghum factories. Hence," it remarks, "Americans consume a product of foreign labor and capital, and refuse to employ hundreds of thousands of their own people in one of the most important of the technological arts.

Salting Butter.

One morning last summer two or three friends met at my dairy, says a correspondent of the *Breeder's Gazette*, and while there the question was raised whether butter gained or lost by salting. The cream of the herd was placed in two churns and churned simultaneously. Butter came first in the smaller churn, coarse-grained and yellow, and was washed in several waters, worked dry in a butter-worker, and weighed. It was then salted, and salt being weighed in, one ounce to the pound, was reworked and re-weighed. It was a strictly gilt-edged article, and was immediately packed for shipment. Here are the weights: Unsalted, well washed dry butter, 17.06; salted and reworked, 17.03; loss in ounces. 03.

Particular attention is asked to the other churning. The butter came too soft, but of excellent color, and was treated precisely like the other sample, except that it was too soft to pass through the butter-worker, and the salt was worked in, and the water and brine apparently throughly worked out by hand: Unsalted, well washed dry butter, 28 03½; salted and re-worked, 29 04½; apparent gain, 1.01.

This sample was too soft for packing or making into rolls, but to a causual observer it would seem about as dry as the other, and to need only cooling in order to be marketable. But my dairy woman at once pronounced it full of moisture, and insisted that it be put aside and re-worked the next day. I therefore took charge of it, and next morning it was reworked and weighed again, making only 26.08½ of strictly marketable butter.

Here we have an apparent gain in the first instance of seventeen ounces, but a final loss from original unsalted weight of twenty-seven ounces, and from extreme salted weight, while soft, of forty-four ounces, nearly one ounce and one and a half ounces to the pound respectively. This is rather an extreme case. Subsequent experiments led me to the following conclusions:

1. That if the butter is worked unwashed, or is washed in clear water, it will lose in salting, and the loss will not average from one-half ounce to one ounce to the pound.

2 That if it is washed in a brine of moderate strength, it will gain by salting, seldom, however, as much as one-half ounce to the pound.

3 That if washed in a very strong brine, it will gain about the weight of the added salt, but will contain quite too much salt to be a first-class table butter.

A Great Yield of Butter.

The Chicago Breeders' Gazette of 25th ult., says.—Just as our forms are ready for the press we have the result of the official test of the Jersey cow Ida of St. Lambert, property of Valancey E. Fuller, Esq., Hamilton, Ont., showing the unprecedented yield of *thirty pounds two ounces* of butter in seven days. This was an official test, conducted by the A. J. C. C., and may be considered as strictly reliable. This cow was bred by R. H. Stephens, of St. Lambert, P. Q., Can., and was dropped Feb. 18, 1878; got by Stoke Pogis 3d, out of Kathleen of St. Lambert 5122 by Lord Lisgar 1066. Mr. Fuller is to be congratulated on this newly developed gem in his grand Jersey herd.

THERE is a paragraph floating around to the effect that a farmer has found out that when his cows eat wild onion in the pasture by putting them up in the stable about three o'clock and feeding them on hay and grain as usual, the rest of three hours allowed all the scent to pass off in other secretions, though previously it flavored both the milk and butter. We advise dairymen to put no trust in such stories. The cow that eats wild onion spoils all the milk that is in her, and no amount of rest will take it out. The only remedy for wild onion is to dig it out of the pasture.—*American Dairyman.*

Poultry Yard.

Why Pure-Bred Fowls are Superior to Mongrels.

To the unthinking mind, or to any of the vast number of persons who hear with incredulity the reports of extravagant prices paid for specimens of fowls, the reason for this disparity is a mystery. Why one fowl should sell for 50 cents and another bring 10 dollars is a question which does not find a reply in their narrow philosophy. "My fowl is as large as yours," they exclaim, "and my fowl is the equal of yours in beauty, why should it not be worth as much?" And thus they contend, judging only from outward appearances, that because one bird is as large and handsome as another, it must, as a natural consequence, be equally valuable.

A pure-bred animal is defined as one which will reproduce its likeness in form and color. Here, then, lies the difference and the chief difference, between a pure-bred fowl and a mongrel. The person who purchases a well-bred fowl may select such a type as pleases him, and set about propagating the breed with reasonable hopes of having his expectations realized, while one who selects from a mongrel stock a number of fowls uniform in form and color, and is so rash as to cherish hopes of being able to reproduce that particular type, will find that his hopes were vain That like will produce like is a principle as firmly established as the sun; and that very fact is the reason why mongrels do not—why they can not—reproduce their influences. Their competent parts are so many—too dissimilar often—and, as a result, the blood which preponderates, or which is the strongest, determines the outward form and color of the progeny.

"But what has that to do with their useful qualities?" you ask. Now, no one will deny that there is a difference in the useful qualities of individual animals; as in cattle for beef, the facility with which some take on flesh, while others, under the same influence, fatten with comparative slowness; and with milkers the difference is apparent to all. So it is with fowls; some fatten readily, while the more nervous, active kinds can hardly be influenced to take on flesh. And we venture nothing in saying that there exists as wide a difference in the egg producing qualities of different fowls as there is between the deepest milker among Ayrshires and the beefiest of Shorthorns. Nor is this difference confined to individual animals, for there exists as great a contrast in the flesh or egg-producing traits of the various breeds. It is just as certain that six hens of one breed will lay more eggs than six of some others, as that six Ayrshire cows, bred exclusively for their milking properties, will yield a supply of milk considerably in excess of the same numder of Shorthorns bred for beef alone.

A certain class of men are willing to allow that some breeds, which have been bred generations for eggs alone, are superior to the ordinary stock in which no system has been followed, but ask, "Why is not a double comb just as good as a single one? Does it affect the laying qualities of the fowl?" Not at all; but observation has taught breeders of fowls that fowls having a certain form of a comb were usually a little larger than their relatives, varying in this particular. Why this should be the case they know not; but the fact remains, that they are larger.

Observation has taught another breeder that fowls having some point at variance with their relatives were superior in some other respects.

Upon this idea is mainly based the guide to breeders, known as the *Standard of Excellence.* We say mainly, because the points have occasionally been moulded by taste or prejudice, instead of judgment.

To every person who understands the elementary principles of breeding, the advantage, the necessity of this fixed standard is obvious, for which the present rigid exactions, the tendency exhibited by breeders is to drift away from the accepted standard, in the direction in which their own peculiar taste or prejudices may lead. With a digression from the old type in color would be a corresponding change in other characteristics, as size, form and habits; and the result would be an entire lack of uniformity in stock claiming to belong to the same breed and variety.

Again: it often happens that a half-bred fowl will, in general appearance, resemble a pure-bred one of the same kind as its pure-bred parent, and the one side; and if no attention were paid to the fine points, which excite the derision of the uninitiated, would easily pass for a thorough-bred; and it is a knowledge of these nice points which enables the fancier to discriminate between the spurious and the genuine. It is the presence of a double comb in a fowl bearing the outward resemblance of a kind on which a double comb is never seen, or the absence of a fifth toe from a leg where it should be, to make it a counterpart of those whose evidence of purity it is, which in many cases mark the only difference between the real and unreal. Therefore, we believe that a pure-bred animal, or one that has been bred for generations with a view to fixing some valuable traits, either of form or habit, is superior to one that has been bred to no desirable standard, inasmuch as theprobability of these traits being reproduced in their progeny are increased just in proportion to the length of time which that course has been pursued. And, laugh as you may, this standing upon trifles, as they are considered by many, this fine-spun distinction of feather, is right and proper; for, except breeders have a target at which to aim, and except all who do not come within a given circle are excluded, we should have "confusion worse confounded;" and instead of a standard based upon intelligence and economy, the form, color and useful qualities of the various kinds would be governed by the whims and caprices of individual breeders.—*Dutchess Farmer.*

The Apiary.

Hiving Swarms of Bees.

On this subject a correspondent of the *Bee Journal* says: I make a two-frame nuclei hive of the right size to hold the brood frames, and in place of having the sides and bottom tight, I nail strips one-half by one-half inches wide, and of the length I desire, and one-half of an inch apart. The top is solid, being made of half-inch lumber and fastened with a hook on each end. I now make an iron bail and attach it one-fourth of the way down on the ends This bail is long enough to pass under the bottom and having a socket in the centre to receive a pole or handle, I then fit two empty brood-combs into the swarmer, having slots to hold them, so they cannot swing and mash bees. When a colony sends out a swarm, I place a hive where I want them to stay, and when the swarm is clustered, fasten down the top, put my pole into place, take the swarmer and smoker in hand, and go to the cluster and place the swarmer directly over or against it, and give them a few whiffs of smoke to start them, and they cluster on the combs at once. I then lower them so I can reach the bail, remove the pole, carry the swarmer and bees to the hive, put it down in front of the hive, unhook and raise the cover, lift the frames out and place them in the hive, when I usually get two-thirds of the bees into the hive, and hardly ever fail to get the queen in also. The rest of the bees will soon follow, and there is no noise or commotion about it. If I have no empty combs, I take out two frames from some hive, shake the bees from them, and place them in the swarmer. As I alway put a frame or two of fresh brood in a new colony to help them, I have no absconding. If I wish to economize on the expense of the swarmer I omit the bail, and nail a 3-inch strip of lumber on the bottom one inch thick; I then bore a 1-inch hole through the cover, and make a shoulder on the pole so that I can run it up between the combs, and use the swarmer as before, I try to guard against swarms uniting, but if it was not for saving valuable queens that would give me no trouble, as the stronger the colonies are the better. I have no use for a pair of pruning shears, or a saw or knife; I can get them as well from a trunk or fork of a tree as in any other place, if I can get the swarmer against or directly over them. I have no occasion to deface a tree.

Preparing to Winter Bees.

Experience has proven that a changeable climate is the worst for bees, for when they remain in a semi-torpid state they consume less stores than when the atmosphere changes from warm to cold and *vice versa.* Then our aim must be to winter them in such a place where the thermometer will remain mostly near the freezing point. If this be in the open air then winter your swarms there; if in a cellar or bee-house, then in one of the two latter places. When you have decided upon the place and have established your apiary for the winter, it is best that they should not often be disturbed.

In order to guard against this you must examine and make a record of the condition of each swarm. If some have little honey and others a surplus, equalize the quantity that each may have a corresponding supply. Should there be no surplus, make a note of these that have a small quantity and make an estimate how long that quantity will last, and after a certain period visit such hives and feed them, if necessary.

To feed a large quantity, allowing much time to elapse between the feedings, is not good economy, as when this is done the bees store away the food that we give them, and it does not keep so well as honey and must be fresh, therefore should be given them daily. This should be done for the same reason that good farmers deal out the hay to their cattle, instead of giving the animals privilege of going to the stack and helping themselves.

Those that have honey generally dilute it with water, bringing them nearly to the boiling point, thereby uniting them better. A cheaper food is composed of sugar and water. Purchase the sugar, and to three parts of sugar add one part of water and scald, and you have a good and digestible food easily made.—*Tribune and Farmer.*

How to Dress A Sheep.

General Cassius M. Clay gives directions how to slaughter and dress a sheep so as to wholly prevent the rank odor and flavor so often attached to mutton.

First, he withholds all food from the animal for full twenty-four hours or more before slaughtering, but all the water it will consume. When ready to slaughter, he has all things in readiness, in order that the job may be accomplished in the shortest space of time possible, when the sheep is hung up by the hind legs and the throat is quickly cut, severing all the main arteries at once, and the moment life is extinct the work of disemboweling is accomplished, and the skin taken off in the shortest time possible. The result is meat of most delicious flavor, without a taint of the rank offensive odor and equally offensive flavor so accompanying to meats of this kind.

He never selects a lamb for tender meat, but always chooses a full-grown sheep from two to three years old.

Horticulture.

Horticultural Notes from the Eastern Shore.

There will be many sound apples blown from the trees ere it is time to gather the crop for winter storage—these can be converted into cider for vinegar; but it must be borne in mind, that to have *first class* vinegar, none but good, *sound* apples should be used; specked and half-rotten apples will make vinegar, it is true, but if you desire a first-class article—*such only as fruit-growers and farmers should use*—then feed the half-rotten fruit to the pigs, and use only sound and ripe apples for the cider you wish to to turn into vinegar.

A correspondent asks me to inform him through THE AMERICAN FARMER if "bagging" grapes will prevent rot, to which I answer no, not entirely. All of the Rogers' Hybrids that I have, seem predisposed to rot, so much so, that no bags that I have tried will save them. Wilder, Agawam, Salem, Merrimac, Goethe and Rogers' No 33 are prominent amongst those experimented with, and rot they will, in the bags and out; but Concord, Worden, Moore's Early, Croton, Martha, Lady, Elvira, Brighton, Iona, Diana, Delaware, etc., where the bags were put on at proper time, were entirely exempt from rot, while those outside of the bags, on same vines rotted enough to completely spoil every cluster. Another nice feature about the bagging is that it heightens and enlivens the color to an astonishing degree; for instance, Brighton has heretofore, without protection by bags, been a red grape with me, while in the bags its color is a rich maroon, extremely handsome. The Elvira has never exhibited much inclination, if any, to amber tint of the berries; I had them in sacks this season, as red as Delaware. I feel warranted in saying to this correspondent, as well as to other readers of THE AMERICAN FARMER, that they will be amply rewarded for their pains and expense in bagging grapes, if they will do it at the right time; just as soon as the berries are formed in the clusters is the time to put on the bags.

A friend on the Eastern Shore of Virginia who is largely interested in horticultural progress, writes me, that though his grapes were half-grown, when by my advice he was induced to try the bags, the result has been satisfactory beyond his highest expectations, and that his next year's watchword in grape culture will be "bags" and plenty of them.

PEACH APHIS.—Another wonderful discovery! A correspondent in the *Gardener's Monthly* for September last, has discovered (!) that the "Peach Aphis" infests and preys upon the *roots* of the peach tree as well as the tender branches!! "It puts an end to peach growing with me," says the writer. "These root aphides, if they are such, and I find ants running over them, have never been referred to that I can find." Then says the editor: "This is wholly new, unless some record has escaped the editor's eye." The foregoing seems the more amusing, from the fact that nine years ago, when my peach nursery seemed like a creeping mass of aphides, I forwarded—by request—a box of the insects to Prof C. V. Riley, at that time in St. Louis, Mo., who gave through the *New York Tribune* "several columns" of description of this same insect, telling *all* about it, but that *one* important fact, that it *wintered* on the *roots*. I wrote to the late Col. Wilkins at the time, telling him that I had abandoned the fight with the aphis, because I had found them on the roots equally as numerous as on the branches. In his reply he requested me to send samples of trees so infested, which I did, and he forwarded the same to Professor Glover at Washington, D. C., for his examination. Mr. Wilkins, a short time afterwards, wrote an article for THE AMERICAN FARMER, in which he gave it as his opinion that this same insect was the direct cause of the "Yellows" in the peach tree; and yet, it "is wholly new" to the wide-a-wake and scientific editor of the *Gardner's Monthly*. I would say to the correspondent of that magazine, don't be unduly alarmed at your *discovery*; you are no worse off now than before; protect and encourage in every way possible the little Lady-bugs; they will clean up the aphis, and in turn will leave for fields affording more abundant provender, when you may expect to *discover* the aphis again on the roots of your peach trees.

I promised notes in some of the newer grapes for this number, but must ask indulgence, as there are so many pressing duties to forbid. J. W. KERR.

Denton, Md.

Kitchen Garden—October.

At this writing (middle of September) the drouth is very severe, and such vegetables as we are accustomed to see in a flourishing condition at this season have an unusually stunted and unpromising appearance.

It is yet time enough to sow spinach and plant onion sets. Spinach should be sown rather thickly and afterwards thinned if necessary. The 10th of the month is early enough to begin to "handle" celery, and one more earthing up before the end of the month is better than oftener, unless the growth is unusually vigorous, which is not at all likely this year. Hoe and thin turnips.

Beets and carrots must be lifted and stored, but not covered with earth until a month or more later. Straw or leaves will answer for the present. My beets kept in good condition for seven months last winter and spring, pitted in the usual way, with some ventilation on top, but the turnips did badly. Mr. Massey advises to put no straw between the turnips and the earth covering, and it looks so reasonable that I feel I must give the plan a trial. I have sometimes thought that a layer of brush under the turnips would admit some air and be of some service.

Plow vacant spaces and clean up the garden generally. If time will permit, some use should be made of the sub-soil plow. My stiff land plowed up better in spring wherever the sub-soiler was used the fall previous.

Heel in strawberry plants for spring planting. A peculiarity of the present drouth is that strawberries are making but few runners, whereas in former years it has been a hard matter to keep them within bounds. In trimming currants, branches that grow too low should either be supported or cut away. A few cuttings should be planted annually, and an addition to the plantation made every year or every second year.

Barbed wire for fruit thieves: Being much annoyed with marauders amongst the grapes, I stretched a few lengths of the wire across the grape patch about three feet from the ground, and I find that people are as much afraid of it in the dark as the lower animals are in the daylight. It will hurt no one but those for whom it is intended.

The following from the *Gardeners' Monthly*, signed J. R. S., Rahway, N. J., shows a most remarkably successful experience with the English gooseberry:

"As the English gooseberry is again receiving some notice, I will state that I have had five sorts of them in cultivation for the past twenty-five years, have always had a crop and never a mildewed berry. They receive the same treatment as I give to all small fruits—currants, raspberries, blackberries and strawberries—viz., a good coat of old manure on top of the ground and a mulch of salt hay on top of that."

It is to be noted what excellent treatment the gentleman gives to *all* the small fruits. English gooseberries are something worth striving for, and if they can be had in Jersey by simply keeping the ground cool and in good condition, it is well worth knowing and trying. Whilst it is true that American varieties are gradually improving, it is not probable that they will ever compare favorably with the English sorts—the only thing of fruit kind for which old-country reared gardeners now and then heave a deep sigh. But then, again, on the other side of the water they cannot have our grapes—at all events, not in the northern part of the island, where gooseberries grow in great perfection.

All tender plants worth preserving must be housed without delay. Many persons who have no green house might afford to have a "pit." It is surprising how many half-hardy and rather tender plants can be kept through the winter in that way. One of my neighbors is so successful with his pit that I must ask him for any secrets over and above the usual conditions of light, air, moderate watering and good covering at night.

Have just been informed that Mr. Fauth, who has been for something like forty years gardener to the Lurman family, has resigned his charge, and a younger man has taken his place. Mr. Fauth has lived to see many little saplings of rare trees planted by him grow into splendid specimens in the beautiful garden in which he has so long taken a pride. Such instances of long service are very unusual among gardeners, and speak well for the mutual confidence betwixt employer and employed. JOHN WATSON.

Seasonable Hints.

This is the best fall month for setting strawberry plants at the North, although these can be set and do well in the South even into November. Blackberries, raspberries, grapes and currants can be transplanted the last of this month.

Caution should be exercised about planting such prolific running sorts of strawberries as the Crescent and Piper's Seedling too close together, for in these cases they make such thickly-matted rows that the berries must be small, while if given more room they will make thinner or narrower rows of matted plants, and yield just as many berries in bulk and much larger and finer. Rows four feet apart, and eighteen to twenty-four inches apart in the row, is close enough, and then, if trained along the rows as they grow, they will make rows from one foot to eighteen inches wide.

Parties frequently write to nurserymen wanting one or two-year-old blackberry and raspberry plants. Now, there is no such thing as a two-year-old plant of these. The new cane of this year bears next year and dies down, another new cane or canes taking its place. Plants that grow this year are all that are worth setting this fall or next spring. Well-grown pips are worth double the price of one-year-olds grown from pips for transplanting. Always order plants of the same year's growth that you wish to set.

Strong plants of pansies transplanted into boxes or pots at mid-autumn can be kept in cold frames until early in winter, or, with proper protection, all winter. From this stock they can be taken as they may be wanted and brought into the house and kept in a low temperature, say about 50°, and near the light. They will bloom freely.

This is the month for starting cuttings of geraniums, roses, verbenas, fuschias and the like for winter blooming. Simply fill a pan or box with two to three inches of rich earth and an inch of clear sand over it; put the cuttings in this mixture. Keep the plants out of the wind and water them well.

Small farmers will soon learn that they cannot compete with the great grain-growing farmers of the country, and that they must work more into fruits. There are thousands of inland towns not yet supplied with fruit that would use up the fruit grown on twenty to fifty acres. These farmers would show good sense by making a change in their plans for the future.

Get raspberries, blackberries, currants and grapes set early in October, then they will get established and rooted before winter sets in.

The cause of the currant worm being less this year than last, is attributed to the severe hot weather in June, when the second crop appeared in large numbers, but did not move from the leaves on which they hatched before they disappeared. Last year was wet and cool throughout the whole season and they continued about, therefore creating a greater need for hellebore than ever before.

The leaves were all stripped off after picking. This year the hot, dry weather, especially in June, has kept them back so that the foliage is complete and fruit-buds are ready for a large crop next year.

In selecting cuttings of house plants, you must take one that is perfectly ripened, and is from a vigorous shoot, yet a little hardened at the base. It is essential to have a bud or joint at or near the end of the cutting, as all roots strike from it, and the nearer it is to the base the greater the chance of success.

Plant your cuttings in common, red pots filled half full of rich loom and two inches of sand on top, not sea sand. Wet this thoroughly, and put the cuttings close around the edge of the pot, for if the bud or joint comes in contact with the surface of the pot, it seems to strike in more quickly. Pull off the lower leaves before you plant the cutting. Press the wet sand tightly about the tiny stem, for much of your success depends upon the close contact of the sand with the stem. When the cuttings are firmly planted, cover them with a glass shade, if possible.

Moisture, light and heat are the three essentials to plant life; without them no cuttings will start. Shade for two or three days from the sunlight, but do not allow the sand to become dry; then give all the sun you can obtain; keep up a good supply of moisture, and you can harly fail to root most of your cuttings.—*Fruit Recorder.*

Cutting the Pear or Quince.

The *Germantown Telegraph*, says: Our readers well know that we have long been the advocate of cultivating what is familiarly called the dwarf pear; but we regret to say that there is little heard of them, and we believe done, in growing pears on quince stock of late years. We were among the first to introduce and recommend the cultivation of dwarf pears in this section and set out a considerable number and varieties of these trees as early as 1847, many of them were still standing, and in the prime of their growth and bearing capacity up to last Autumn. In fact, we think as favorably of them to-day as we did thirty years ago. It is true that if we had plenty of ground, and desired to raise large quantities of fruit for market, we should not go into their cultivation extensively, but where the ground is limited we should, if we wanted only a family supply of the best pears, and larger than we could obtain from standard trees, grow them exclusively. It is admitted on all hands that finer fruit can be obtained from the dwarf than the standard trees, and as much of it from the space occupied. The complaint, which formerly was very general, that dwarf trees were short-lived, is not correct in a general sense. There are dwarf pear trees now standing, planted out thirty-five years ago, which look as thrifty and produce as abundantly as at any period of their growth, and will probably continue to bear for ten or fifteen years longer if left undisturbed and properly attended to. And when their bearing days shall come to an end, they are easily removed and their

places supplied with young ones, which may yield a crop in two or three years. Indeed, we have had them to come into bearing the first year of being transplanted; but the fruit except perhaps a single specimen, should not be allowed to remain, or the bearing capacity of the tree might be interfered with. Care, however, must be used in selecting the trees, as many of them may turn out unsatisfactory, and some of them may not fruit for eight to ten years. With us the Summer Julienne, Comice, St Michael, Belle Lucrative, Doyenne d'Ete, Lawrence, Bousock, Bosc, Ott's Seedling, Glout Morceau and Giffard stand at the head of the dwarfs. The Doyenne d'Ete is the first to ripen, from the 10th to the 13th of July; then follows the Giffard, about the first week in August, next Ott's Seedling, etc. The Belle Lucrative and Glout Morceau, however, are subject to blight, which is a serious drawback—the latter being the best winter pear after the Lawrence.

It must be remembered that as a favoring point of the dwarf pears, any border, corner, or out-of-the-way place, not too moist, will be suitable for the planting of dwarfs; but they must every year, before winter sets in, have a generous top dressing of good barnyard manure, to be forked in the following spring, and the soil about the tree kept as friable, free of weeds, grass, etc., as the onion or cabbage beds. The roots of dwarf are very small, hence plenty of rich manure and frequent stirring of the soil some three feet around the stem is especially necessary to insure a vigorous tree and full crops.

In setting out dwarf pear trees, *they should be planted three or four inches below the junction of the pear and quince*, which will prevent the worm from attacking the quince, to which it is seriously liable, and from which the pear stock is entirely exempt. The butts of the trees should be carefully examined before removal from the nursery, to see that the worm is not already there, and if so reject the trees. When the trees are not set below the joining of the pear and quince, the *bandage system*, which we originated and recommended over thirty years ago, will be found a sure protection. This is to wrap round the stem of the tree any course or old muslin, and tie it closely to it, allowing it to go one or two inches under ground, and some six inches above ground. The bandage should be applied as soon in February or March as the ground will admit of. It will last a couple of years without renewing; but it is better to remove it in October and apply again as directed.

Tree planting is now in season, and it is for this purpose, for the benefit of any of our readers who may be disposed to try the dwarfs, that we present these hints, in order that they may inspect well-cultivated dwarf trees in gardens or grounds where they are successfully grown, and be prepared to set out a dozen or two, or as many more as they may wish and have room for, selecting from the list which we every spring and autumn print as a guide to new beginners, or others who may desire to refresh their memories as to the choicest varieties.

Niagara Grapes.

We are in receipt of a basket of Niagara grapes from the well-known grape propagator, T. S. Hubbard, of Fredonia, New York, who has been appointed by the owners their general agent for its introduction.

Mr. Hubbard writes us as follows: "We send you a basket of Niagara grapes grown by Jonas Martin, of Brocton, New York, where, during the past four years over two hundred acres of this variety have been planted.

Mr. Martin has 47 acres of them 10x10 feet apart and given ordinary vineyard culture. The vines on which these grapes grew are four years old and produced this season from 20 to 40 lbs. per vine. The clusters average nearly a half pound each, and are of large and uniform size. Several single clusters weighed a pound each. One four year old vine produced eighty-eight clusters which weighed exactly forty pounds, and notwithstanding this extraordinary yield the fruit all ripened and was picked at one picking, less than a week after the first fruit was picked in the vineyard and before Concords were one-third of them ripe. I think the Niagara will succeed as universally as the Concord. It is a trifle earlier—is more vigorous in growth—is equally healthy and hardy, and produces from fifty to one hundred per cent. more fruit. The skin is more firm, making it a much better keeper and shipper than Concord. In quality many good judges pronounce it very fine, while others think it but little, if any, better than the Concord. We think it would generally be called better. All agents who have authority to sell the Niagara will hold a certificate given under the seal of the Niagara White Grape Company. To every vine sent out will be attached a small metal seal on which will be stamped the trade mark, "N. W. G. C.," a *fac-simile* of which is shown on the certificate of agency. This will effectually protect at least all who read the newspapers from being swindled with spurious vines."

Keeping Winter Apples.

To understand how best to preserve the apple through the winter—especially those who raise them only for family use—is, says the *Germantown Telegraph*, a matter of some importance, as all must admit that, after all, the apple is the king of fruits. Those who have large orchards and make apple-growing a leading branch of farming, supplying the market from the beginning to the end of the season, know all about the best methods of preserving the fruit up to the first of June, and generally up to the first of May, when the strawberry and cherry crops begin to make their appearance. Well, as to the way that the owner of premises where only a moderate quantity of the apple is grown, necessary to supply the family needs alone, we will proceed to give a few suggestions of the way to keep the fruit for a prolonged period. Of course all apples should be hand-picked, and with so much care as to avoid all bruising, and sorted over for all defective ones—and those are defective and liable to rot early which have any portion of the skin removed or contain any evidence of the operation or presence of a worm. Pack in dry flour barrels, put in the head, pressing down the same firmly on the fruit, and place them in a perfectly dry shed or out-house, until there is danger of freezing, when the barrels should be removed to a dry cellar, and the fruit taken out and laid upon an elevated scaffold or shelves, spread out singly, which will admit of the stock being overhauled, the decayed ones and those threatening decay being at once removed. The temperature of the cellar should be between 35 and 55 degrees; and where there is any excess of dampness let the boards on which the apples are placed be liberally sprinkled with fine lime. In sorting over the apples on all occasions, great care must be observed to avoid bruising or injury of any kind.

Another way.—This is a "cave" or rather "vault," running from the cellar wall into the solid earth outside, with a hole in the centre, where a three inch pipe is run down to the sand or loose earth, and the dirt floor inclining from all points to carry away every drop of water, thus keeping the apartment dry, filled with lattice shelves, with a six inch wired air vent connected with the out side, and with a close entrance door; also with a good coating of lime covering the entire bottom, in case of necessity from dampness, as before stated. This is, of course, attended with more expense in the first instance, but once prepared it will last for generations, and is perhaps the very best method of keeping apples, pears, etc. By it we ate pears two years ago the last day of April, with the flavor quite unimpaired.

Scotch Method of Wintering Roots.

Mr. Crozier practises, with great success, the Scotch method of preserving root crops in winter, which he thus describes: A dry spot being selected, where no water will stand in winter, a space is marked out six feet in width, and of any length required. This bed is excavated ten to twelve inches deep, and the soil is thrown out of the bank. The roots, either mangels, turnips, carrots, or potatoes, are built up evenly to a sharp point about five or six feet in height, so that the roots form almost an equal-sided triangle, six feet on the sides. This bed of roots is then thatched over with four inches of straw, after which the earth is banked over the whole about one foot in thickness. This covering of earth and straw is sufficient to keep out any degree of frost that we have in this latitude, though we rarely have it much below zero. In colder or warmer sections, judgement must be used to increase or lessen the covering. Vents, or chimneys, made by a three-inch drain pipe, or anything of similar size, are placed every six or seven feet along the top of the pit, resting on the roots, so that the moisture generated may escape. In extremely cold weather these vents or chimneys should be closed up, as the cold might be severe enough to get down to the roots. Pits so constructed rarely fail to preserve roots perfectly until late in spring, and are in every respect preferable to root cellars; for, no matter how cold the weather may be, they are easily got at; the end once opened, the soil forms a frozen arch over the pit. Mr. Crozier says he has practised this plan for years on his farm at Northport, L. I., some of his pits containing hundreds of tons of mangels, etc.

Co-operation in Europe.

It will probably surprise most people, says the New York *Tribune*, to be told that in England co-operation has made such headway as to induce a cautious journal like the *Spectator* to predict that long before the century is out the whole of our working class will be in association, and will have the staple trades of the country in their hands or under their control. Yet the statistics of the movements seem to show that such a prediction is not idle exaggeration. At present there are 1,200 societies of working folks, numbering 600,000 members. Almost all of them are heads of families, and they therefore represent 2,500,000 people, or one-twelfth of the whole population of the Kingdom. These societies possess a capital of $45,000,000 and make a net profit of $10,000,000 yearly. Besides this they have a Wholesale Society, now in its 20th year, which, on a capital of $200,000, does a business of upward of $15,000,000, with a net profit of $160,000. This concern has branches and depots in Scotland, Ireland, this city, France and Denmark, and owns three large steamers which ply between England and the Continent on the company's business.

The Maryland Horticultural Society's Annual Exhibition

Will be held in the Natatorium, N. Howard street near Franklin, in this city, October 7th to 10th, and promises to be a fine display of plants and flowers. There are also sections for floral designs, fruits and vegetables, and by the generosity of the late Mr. Garrett some liberal prizes are offered for plants grown by amateur cultivators in windows, etc.

The Grange.

National Lecturer's Communication.

Subject for October.

Question.—Do we, as an organization, employ co-operation to the best advantage?

Suggestion—Organization implies co-operation, for it requires united effort to form organized bodies for any purpose. The Order of Patrons of Husbandry was instituted for the purpose of uniting the farmers into a fraternal association, with a view of bringing them regularly together in their Grange meetings, and there cultivate our social natures to a more friendly feeling and closer associations among ourselves, and to improve our intellectual facilities to greater usefulness to ourselves and to the world. And in proportion as these two features are advanced in any Grange community will rest the financial advantages to its members. The social advancement in a Grange will aid much in its educational work, and the educational advancement leads to financial advantages. But to accomplish either of these, co-operation must be employed—it is indispensable in making Grange meetings a success—a lack of prosperity in these prevents social culture, and hinders educational advancement, and the failure of these prevents financial benefits. If these are made successful in every Grange, then co-operative business enterprises will become so firmly established that it will place them beyond all doubt of failure, for successful results will be assured.

The success of Grange meetings, the advancement in the social and educational work, as well as the success and prosperity of all business enterprises depends upon ourselves. Our acts, efforts, means and influence must be united in a co-operative way and success is assured.

This subject loses none of its interest; it is an all-important question upon which rests everything connected with the Order, it's very life depends upon the co-operative efforts of its members. In considering the subject the following question present themselves.

1. Do we, as a Grange unite in our work, and co-operate in making our Grange meetings what they should be.

2. Do we co-operate as a Grange in considering and discussing questions pertaining to our interest and our welfare?

3. Do we unite our efforts, means and influence to the financial advantage of our members?

If we desire to build up our Grange and make it a useful instrument in the community for good, for the advancement and elevation of ourselves, our families and our neighbors, then we must take deeper interest in Grange meetings to make them interesting and profitable.

If we desire to profit by the educational work in the Grange, in improving us intellectually, then we must study the questions presented and participate in their discussions.

If we desire to profit most by the financial feature of the Order, we must consolidate our efforts, means and influence in a business enterprise, either in merchandising where there is an opening for a co-operative store, or in securing supplies at wholesale rates, and in disposing of surplus products. If we desire to succeed in either of these propositions, we must work strictly upon the true principles of co-operation to accomplish the object sought.

If the winter cabbages are growing so fast that they are likely to burst open before the time comes to put them into the cellar, or pit, and there is no market for them, their growth may be checked by pulling them about half up and tipping them over on one side, leaving just roots enough in the soil to keep them green. Do not do this until they have made solid heads. Tip them toward the north, to prevent scalding the top of the head in the sun.

The American Farmer

"O FORTUNATOS NIMIUM SUA SI BONA NORINT AGRICOLAS." . . . . . *Virg.*

PUBLISHED ON THE 1ST AND 15TH OF EVERY MONTH,

By SAMUEL SANDS AND SON,

At No. 128 West Baltimore Street,

(*Sign of the Golden Plow,*)

BALTIMORE, MD.

WILLIAM B. SANDS, Proprietor.

SAMUEL SANDS, WM. B. SANDS, } Editors and Publishers.

Richmond, Va., Office, 619 W. Main St.

SUBSCRIPTION:

$1.50 a year, in advance. Clubs of five or more will be supplied at $1 each.

ADVERTISING RATES:

	1 Time.	1 Mo.	2 Mo.	3 Mo.	6 Mo.	12 Mo.
1 Inch 12 lines	$1.25	$2.25	$4.00	$5.50	$9.00	$15.00

Liberal reductions will be made on larger advertisements. Advertisements to remain on outside page subject to special contract. Transient Advertisements payable in advance—all others quarterly. Advertisements should reach us by the 12th and 27th of the month, to secure insertion in the succeeding issue.

*** Subscribers who have minerals, ores, marls, fertilising materials, or other substances, will be advised through our pages, by competent chemists, as to their composition, uses and value, by forwarding specimens to this office, *expressage or postage prepaid.* Questions as to application of chemical science to the practical arts will also be answered.

*** Persons desiring information or advice on diseases or injuries of domestic animals, will receive replies from a competent veterinary surgeon, by giving a plain statement of the symptoms, etc.

☞ At the office of THE AMERICAN FARMER are located the offices of the following organizations, of each of which its proprietor, Wm. B. Sands, is secretary:

Maryland Horticultural Society.
Maryland Dairymen's Association.
Maryland State Grange, P. of H.
Agricultural Society of Baltimore Co.

BALTIMORE, OCT. 1, 1884.

An Apology.

This issue of THE FARMER will reach its subscribers several days after its date. The demands upon the time and attention of the active editor by the Baltimore County Fair is our excuse, but we trust such a delinquency will not soon occur again.

The Baltimore County Fair.

The fair for 1884 has been one of the best the Society has ever held, and has been largely attended, though the visitors hardly equal in numbers those of last year. The county people seemed to turn out in mass, whilst the trains from this city were heavily loaded. Rain fell on two days, and but for this it would probably have been the most successful fair at Timonium.

Every horse stall was occupied, and the display of cattle was large and meritorious. Sheep and swine were not abundant, but comprised some good specimens. The poultry and bee displays attracted many visitors. Of fruits and vegetables the exhibits were good, the dry season considered, the former equalling in extent and variety any former show. In the household department there was a large collection of home manufactures, dairy products, etc. A magnificent collection of farm machinery and implements was on the ground, including almost every kind of labor-saving contrivance for farm use.

SALE OF JERSEYS.—The sale of Messrs. H. R. Tucker & Co's importation of Jerseys has been fixed for Friday, 10th instant, and will be held at Kearney's stables, corner of St. Paul and Centre streets, Baltimore. We have heretofore referred to the quality of these cattle and we hope for a good attendance at the sale.

Death of John W. Garrett.

At no period of its corporate existence, has the city of Baltimore experienced the loss of a citizen, whose usefulness had rendered such important services to its growth and prosperity, as that of Mr. Garrett, who for a number of years past has held the position of President of the Baltimore and Ohio Railroad Company; and the resolutions of the numerous public associations with which he had been directly or indirectly connected, bear ample testimony of the appreciation in which he was held by his fellow citizens. Mr. Garrett's fame and name were not alone confined to his native state, but he was confessedly acknowledged to be the most able railroad official in this and perhaps any other country. Notwithstanding the extensive demands upon his time and attention in the other pursuits of his life, Mr. Garrett took great delight in the management of his large landed estate, Montebello, near this city, and was especially interested in the horticultural department connected therewith, from which he was an occasional exhibitor at our State Horticultural Society's shows, besides contributing liberal special prizes to promote its objects.

The Drought Broken.

After a protracted drought of several weeks, we were blessed on Tuesday with a rainfall, which, though not of a very extended character, has done much good to the growing truck crops and the grass fields, all of which have suffered to a very great extent, for such a severe September drought was never before known. It has caused delay in many quarters to those who had not gotten their plowing and wheat seeding finished, but there is still ample time for this work, as up to the middle of October in the middle states, and even to the latter end of the month, unless the weather should prove unusually unfavorable, the work in this direction can be completed without much fear of damage in its final results. The corn crop has been generally gathered in, and is a fair average one, both in quantity and quality Great damage has been experienced during the existence of the drought by the mills, many of which were obliged to cease grinding in consequence of the want of water—and the wells and springs on many farms have been so entirely empty, that for cattle, and even the supply of spring water for the family, has been drawn for several miles. It is to be hoped that a more extended supply will be speedily enjoyed, as the rain of the 30th, was but partial.

The Hog Cholera in Maryland.

This terrible scourge to the swine of this state, has been felt in full force in the western counties, and has carried off immense numbers belonging to the farmers all along the line from Montgomery to Washington county. Dr. Ward, the State Veterinary Surgeon, has shown us a letter from ex-Gov. Hamilton, of the latter county, in which a most urged appeal is made to Dr. Ward to visit the neighborhood, in order that, if possible, some efforts can be made to stop the ravages of the plague. The Governor may well be in earnest, as he had lost some 55 head of his own herd. A post mortem was made on a hog just dead, and the pathological lesions, although in some particulars slightly different, agreed in the main to those described by Dr. James Law in his investigation of a similar outbreak published in the Report of the Department of Agriculture at Washington, 1880. Dr. Ward, with Dr. Simmons, of Hagerstown, submitted some of the tissues and fluids to microscopical examination, and both were of opinion this outbreak is of the same nature. Dr. Ward advised Gov. Hamilton to exhibit doses of hyposulphite of soda, in 4 to 6 drachm doses daily, according to size, in water, which, from thirst, the animals drink eagerly. He also advised fumigation of the hogs by either chlorine gas or sulphurous acid gas, and Dr. Simmons strongly advocated this as a prophylactic of great value, Dr. Ward directed that all pens and floors should be well dressed with fresh made lime wash and carbolic acid, all litter and excreta burnt, and that all dead animals should be buried at least three or four feet deep and covered with quicklime. Gov. Hamilton solicited Dr. Ward to visit the neighborhood again soon, in the hopes that his suggestions for the extermination of the disease may be carried out to his satisfaction and clear the plague before the State fair is held. The losses among swine have been exceedingly large in that neighborhood.

Special Farming.

Some of our contributors had something to say a short time ago on this subject, and we give, as another view thereof the following by a writer in the *Country Gentlemen*:

My farming used to be mixed enough to suit any one. I was advised, when I began, not to hire much help, but to do what I could myself and let the rest go; to have a good many irons in the fire, and then I would be sure to hit it with some of them; not to pay out any money for anything that could possibly be raised on the farm, &c.

Not having had any practical experience, I tried to do as I was told to. I kept a small dairy and made butter. This was a good business enough, perhaps, but having so much else to attend to, it was necessarily only half done. After taking out interest on the cost of the cows, depreciation, and the value of the feed they ate, there was nothing left to pay for the hard labor performed by my wife and myself, in milking the cows and making the butter. We fed the skimmed milk, mixed with oil meal and wheat middlings, to calves. We fussed two or three hours a day for months, mixing and warming the feed, and giving it to them, and then fed them hay all the winter that was worth, in those days, from $12 to $20 a ton. In the spring they would sell for just about as much as a first class veal calf six weeks old, or possibly a little more, but not near enough to pay for the feed they had eaten, to say nothing of the labor of taking care of them.

We kept pigs—one summer ten of them. We fed them milk, meal, grass, applies, &c. They cost to start on in the spring, about $2.50 each. In the fall our butcher, as a special favor, gave me $6 a head for part of them, dressed and delivered at his market. I think, perhaps, we got pay for the meal fed them. We will say nothing about the milk, grass and apples, for we had them—we did not have to pay out any money for them. Then we had the pleasure of carrying swill to them three times a day, and seven days in a week, of hearing them squeal and of dressing them. That was the profit.

We kept hens, of course, and the last thing I remember of them was their turning some $10 a bushel clover seed, which I had just sowed on the wheat field, into eggs worth ten cents a dozen in trade. We raised a few oats and a little corn—in fact did a little of everything. We worked hard early and late, wife and I, and worried because we couldn't do more. After a while we became sick of this steady unprofitable drudgery, and began to cast around for a pleasanter and easier way of getting a living on a farm. I said to myself, why is it that a farmer must be a drudge? Why must he be a jack at all trades, and particularly good at none? Why must he scatter his energies instead of concentrating them, and excelling in some one direction? "You must not have your eggs all in one basket," seemed to me an admission that one was careless and unskilful, and not fit to be trusted with eggs any way. This saying, as applied to agriculture, I thought was all right when this country was new, when there were no railroads or markets to amount to anything, or money either. It was necessary for one to raise pretty much what he wanted for his own use then, as had he raised too much of one thing, he very likely couldn't have sold it. But now it is altogether different, as almost anything one can raise can be readily exchanged for cash, and with the cash he can buy almost anything he wants, and many things cheaper than he can raise them.

The old argument in favor of mixed farming bothered me for a while; that if it is a poor season for one crop, or you have poor luck with it, some other crop may succeed. I finally made up my mind that poor luck was largely owing to the carelessness of the farmer himself, and that this carelessness was caused, to a great extent, by his trusting to his mixed farming, and the idea that some of his crops would turn out well enough to keep him, any way. It seemed to me as though, if a farmer did the best he could, in every respect, he had no more to fear from poor luck or poor seasons, on the average, if he raised one or two crops for which his soil was particularly adapted, than he would if he raised ten or twelve crops, some of which, perhaps, were not suited to his soil, and then, by raising fewer crops, he would get rid of a good deal of worry and clashing and unprofitable drudgery, and he could devote his time persistently to the making of the most possible out of his specialty.

Acting on these views, I sold my dairy, hens and pigs, and gradually worked out of mixed farming. My land was well adapted to potato-raising, and so, as we had but few acres of land fit for cultivation, and it was necessary to raise a crop that would bring a good many dollars per acre, we made potatoes a specialty, and raised wheat and timothy and clover in connection, to give a rotation and moderately steady work. All fussing and unprofitable drudgery has been thrown aside. There is not a calf or colt, a pig or a chicken, a sheep or a dog on my farm. We raise potatoes and wheat to sell. The hay and straw feeds and beds the horses and one cow. Sometimes we have a little over to sell. We do not fuss to make butter from one cow, but buy it at the factory. We haven't even a garden by itself, but raise our garden stuff in the field, right in rows with the potatoes, so they can be all cultivated right through at once.

Instead of not paying out any money for anything we could raise on the farm, we buy everything we want, except potatoes, milk and garden stuff; and we could not be induced to go back to mixed farming any more than we could to go to New York in a stage coach instead of a palace car.

Do not think I am afraid of work, a kid-gloved farmer, above feeding pigs or anything of that kind. That is not it at all. I like to manage the way that is the most pleasant and profitable. There is no more necessity for a man to be a drudge on the farm than in the city. There are plenty of men who feeds pigs, and, making a business of it, they make money. I cannot afford to fuss with two or three pigs all summer.

There are plenty of dairy farms and factories where a business is made of butter making, and it pays, I presume, but it would not pay me to let my wife fuss making butter from one or two cows. I should call that, as also my bothering with one or two pigs, unprofitable drudgery, and not at all necessary now a-days, however it might have been fifty years ago. What is the use of being fifty years behind because we live on a farm?

I hope your readers will at least give this matter a little thought and not throw it aside as unorthodox and impracticable, because it is so different from what the majority are doing. There are few farms on which there is not more or less unprofitable drudgery performed—some crop raised, or some practice persisted in, that makes work and clashing and worry, and brings no profit

An Enemy of the Cabbage Worm.

Mr. E. C. Hills, a correspondent of the *American Cultivator*, in Connecticut, writes that paper as follows:—

The abominable pest known as the cabbage worm has at last met with a parasitic insect, which, though diminutive in size, has proved a powerful enemy to the pest in this vicinity. The adults of the cabbage-worm enemy are little black flies, somewhat similar in shape to the common field wasp, and not much larger in size than half a fully-developed mosquito. They lay their eggs on the worm of the cabbage butterfly, varying in number from twenty to fifty, the average number to each deposit being about thirty. These hatch soon after their deposit and penetrate the body where they maintain their growth, which must necessarily be rapid, since the worm of the cabbage butterfly finishes its larval course in two weeks from the egg.

When the transforming period arrives, a simultaneous movement is made preparatory to the evacuation, which is done by forcing themselves through apertures which they make along the body; seemingly at a common signal the rush begins, and they are seen coming out and filing into lines, three deep on either side of the worm. After taking a survey of the surroundings and getting into position, which movements occupy less than ten minutes, the work of spinning themselves into cocoons commences; this, too, is done with great rapidity; less than an hour finishes their resting homes. In length they are one-fourth inch, and in size about that of a darning-needle. The cocoons are in shape and size similar to that of a small kernel of wheat, yellow in color, and left in clusters.

In about ten days the adults, or flies, begin to emerge from the cocoons, and are very active and vigorous. Their aerial powers are well calculated for roving in the broad fields and for taking long flights. They are strangers to us and where they came from, or the extent of country they occupy, I have no means of knowing. They proved a terrible enemy to the cabbage worm last season, and are again on the alert this year. They made their first appearance here last season, and my first introduction to them was a great surprise to me. During the series of experiments, I brought specimen worms from a cabbage field near by my home, and on the following morning was much astonished to witness three of these worms webbed down and partly covered with cocoons. This led me to an investigation in the field where these worms were taken. Cocoons and dead worms were found in great numbers, and a blight was frequently seen on heads, which I suspected had caused this strange phenomena. Ten days of patient waiting confirmed my suspicion as the cocoons brought out the identical fly referred to. The balance of my specimens, with the exception of four that died, were relieved of their burden from day to day as described; two of these were found to contain the larvæ, and were also found dead, which will always occur if the worm dies before evacuation takes place.

For the past five or six years, with the exception of last year, cabbage fields in this vicinity have presented a mass of filthiness at heading-time, from the rapaciousness of these filthy cabbage worms. Millers were seen at fall heading-time, equalling any of the plagues of Egypt, hovering over cabbage fields; their density has been described as a rising fog in the distance. All remedies have failed in any material reduction of their numbers. Last season the millers were out in the spring in larger force than ever before, producing increase rapidly. This increase was maintained nearly up to the fall heading-time, when a falling off of millers was quite noticeable. At the time when they are generally most numerous they were last year but rarely seen in the fields, the result of the harvest being a clean crop, with but slight exceptions.

During this year the reverse has been the case. All along, during the summer, the millers were rarely seen until about three weeks ago; in fact, it was difficult to get specimens until recently. However, through importation or by some other channel, the pest have again put in their appearance in considerable numbers. Nearly three weeks ago I brought specimen worms in from my garden, and also from the grounds of a near neighbor. I quickly discovered that the worms were carrying a heavy burden, which satisfied me that our new friends, the parasitic insects, were again in the cabbage field. Being impatient for the positive proof of this fact, a large and plump worm was selected for dissection, resulting in the discovery of fifty insects. By waiting a few hours the slaughter might have been prevented; as it was, two of them managed to get into cocoons, and many more would have done so had I handled them less roughly. After a while the balance were relieved of their burden from day to day, and in short, it proved but a repetition of last season's experience.

Since writing the above, specimens have been brought to me from a large plat of cabbages on the Connecticut River meadows, over a mile away from my home. The specimens were two dozen in number, and all large size. They soon commenced showing evidence that their enemy was at work, from the fact of cocoons being observed as left in every direction in the jar containing the specimens. I send you some specimens of these little friends to the gardener, which represent every stage they pass through except the egg.

Home Department.

RECREATIONS OF A COUNTRY HOUSEKEEPER—NO. 10.

A Man Convinced.

(*Continued from Page* 244.)

As soon as the new comers were seated and the room quiet once more, by numerous appeals, Sister Mackey proceeded with the reading of "Mars Phil's" amusing experience as a housekeeper.

II.

THE COMBAT DEEPENS—ON YE BRAVE OR—OFF.

"Mis Judge Nelsin in de pari'r, en cum spen' dr day!"

This piece of information was too much for Mars Phil's endurance. He had a sly thought, not even acknowledged to himself, to which "the wish was father," that Neeta was around somewhere, and was helping him in some invisible fashion; and now, to know certainly that she was shut off from him, and, worse still, shut up in the parlor with Mrs. Judge Nelson—that most particular of housekeepers—he had wrestled through with a small portion of the huge table load of things there was to wash up. But there stood those terrible lamps! He looked at his watch, and found, to his consternation, it was nearly 10 o'clock, and no dinner given out yet. Indeed, what was to be given out for dinner? What *did* it all mean? Who was to see to things in the kitchen when he was in the house, or to things in the house when he was in the kitchen? Who was to do anything? How strange, to be sure! Didn't things *do themselves?* And wasn't a house a machine wound up to run—*just so?*

At this juncture, the irrepressible Kinky broke in upon his reflections by handing him a neat note of request from a neighbor for a certain dress pattern. Along with the note came some apples for the children. The little ones, strange to say, had been quiet all morning—bought over by mamma's thoughtful care, to stay in the play-house and play party. Now, telegraphed to by the nimble Kinky, they came racing down stairs with a stunning outcry for apples.

"Take'm, and go now, right straight back!" exclaimed Papa Philip, pressing the whole basket on the little dots in his eagerness to be rid of them.

"Give us some more party, then, papa—bread an' serves'll do," exclaimed Roley-poly, mounting his father's leg as if he meant to ride it for a stick horse.

"Er take and tandy, poppa, hits er doodest," continued the imitative Dimply, encircling his other knee with her little clinging clasp.

Before he could shake his legs loose, Kinky, who was lingering around for her share of the apples, drew his attention to the open window with both hands up, mouth and eyes wide—

"Laws 'r mussy, Mars Phil! Only jester looker yonder! Ef deah ain't dem air hens er cumin off dey nesses!"

"Well,—let'm come, then!" roared our incensed general.

"Laws er mussy, Mars Phil, Mis Neetr! Her'd hab er duck fit, see dem hens cum er straglin roun' dis er way; her's dat purtic'lr, you neber see der like—has der nesses bunt up, en ashes throwd in, en der hens er greased, en der chickens, en—"

"O, papa, dim me my bread en lasses, will, ou?" interrupted Dimpley, nudging him vigorously. Baby's sleepy time was coming.

"*Ou is der wusses mummer is ever wus!*" she continued, grinding her fists into her eyes, and swelling into a terrible little toad. A sudden and happy memory seemed to possess young Roby, balancing himself from foot to foot, he shouted with great glee:

"Picnic at s-i-x—Picnic at six! Did you 'member that, poppa?" Then with quick earnest: "En my jacket—when's my jacket goin' get done? Now, Mister Pop, you must go this very, *very* minit and do my jacket, won't you? Please, popper, *p-l e-a-s-e!*" And Roby-Poly again wrapped himself caressingly around the victimized legs.

In Philip's standing position this was not a pleasant way of putting the thing.

"We's doin', ain't us poppa?"

"No, Dimply. *No!* hush this very minute, Miss, or I'll slap you both into the middle of next week."

"Deed 'ou *is* der wussist mummer!" repeated Dimply with another baby-swell.

"Ou ain't no mummer 'tall—*ou's ol' wuf*—"

This last came out very slowly, and Dimply seemed struck by her own wit, for she looked up with a spark of fun shining under the troubled waters in her eyes. Roby laughed outright and said:

"Know what she means, poppa? She means that story mummer tells us 'bout—er—'bout *Relics en Ron-er-mus.*"

Poor Pater familias! At another time how he would have enjoyed this travesty of Roman history. But now, there was not laugh enough in his entire corporosity to make the faintest ripple on the cheek of a sick dormouse. The dinner-pot set heavy on him.

"Whey is my mummer? Whey *is* my mummer?" whimpered Dimply, digging her fists again into her eyes.

"I wish to the Lord you'd go and find her!" bursted from Father Phil's full heart.

Ah, could he have seen the rare sport he was giving the ladies through the open window, his confusion would have been worse confounded. There was really noon; and not one place, nor one thing yet in order; and not a moment had he had, even to take a smoke. He found to his horror, also, that *Miss* Kinky had betaken herself to the spring house, and he must look after her and her butter-work if he was to have the light of her countenance again to-day. He was just lighting his pipe and whistling up his courage when his rush of resolution was arrested by a rush of sound. In the ups and downs of this morning's wild work, Kinky had left the brimfull water bucket just at the stair's head. Baby Philip, who had been crawling and sprawling about since his nap, in his toddling efforts to rise, had pulled himself up by it. But, like many another young aspirant, his prop was too near the edge of danger. And next minute, with a wild yell and a roll over and over, screaming and bumping and thumping, down came baby and bucket and all. Philip tarried long enough to see that baby was more scared than hurt. Then, hearing the parlor door open and a quick step along the hall, (I'm ashamed to own our hero's ignominious retreat!), but he positively dropped the little subject and took to his heels, making a hasty dodge through the back door.

When he got to the spring house, he found nothing there but Kinky and slushy butter—salt, paddle, everything forgotten. For a moment he felt explosive enough to blow up Kinky and the whole concern; but, *cui bona?* Philosophy grows fast in good ground, and poor "Mars Phil's subsoil was getting well 'broke up." Instead of stamping the foot that was raised in fury, he merely murmured to himself:

"Sa-l-n-t-s—Sa-i-n-t-s on the e-a-r-t-h, I do vow w-o-m-e-n m-u-s t be!"

Then aloud, in a subdued and suggestive voice, "Kinky, child, let's take the whole concern up to the kitchen. Salt and things up there, I—s-u-p-p-o-s-e."

The last word was added cautiously as if he'd begun to be doubtful of his supposed cases, and this "suppose" was not founded on kitchen experience. When they had lugged the churn through the hot sun, its contents were in too melting a mood to be further agitated. Our reformer's fire was gone out—as the finest of stove fires, and reformers' fires also, will do—only the empty teakettle there grinning at him with its open black mouth. Manly impulse suggested another braining to Miss Kinky. But no Jonah's gourd could have got such a run on itself as our general's philosophy was getting now! However, not even all powerful philosophy holds a labor exemption privilege. The bucket had 'to be filled and the ax plied again before that kettle could be persuaded to sing. And the song even did not lighten the burden of the hour. What for dinner? Plenty of vegetables in the garden, chickens in the yard. Who was to get them? WHAT FOR DINNER? That all engrossing, peace-destroying question to so many housekeepers! Never before had it occurred to our good *man of the house* that dinners did not magic themselves up. He began now to have a nervous dread of losing sight of Kinky for even a moment. Anything, *anything* in reason for some accommodating "cat's paw"—white, black or colored. There was a piece of cold lamb in the pantry. Devoutly he gave thanks for that. But no bread—not a crumb! And he a brag bread-maker.

"Gracious heavens, what a fool—what a fool!" This remark was low and profound and addressed to nobody in particular.

Turning from himself, and in an equivocal way, "Kinky, you can fry chicken, can't you?" lifting his hat and running his fingers through his hair. The question being as to how Kinky was to catch the chicken without running off from him, that invaluable piece of ebony had already replied, "Dunno, Mars Phil, neber fried none; spec I kin, dough; kin cotch 'm anyhow!"

She was off now like a shot arrow as soon as she saw Mars Phil turn his back—and Mars Phil turned his back to crane his neck out of the kitchen window in desperate wonderment over Mate's return. And never did "Sister Annie" from Blue Beard Castle gaze with more anxious eyes to see if "somebody wasn't coming." Nobody! Up and down the long lane. Yes. But there actually *is* an appearance. Fortunately for "Mr

Judge Nelsin," for poor cook, for poor anybody who wants a dinner this famous 21st July. Somebody is hoving in sight. It is only the field hands who are "taking out" for dinner. But no arrival of Mrs. Blue Beard's brother, just as the old monster had her by the hair of her head, or the sudden coming in of a couple of experts from Delmonico's could have brought to "Mars Phil" a keener sense of relief. Daniel and old uncle Mose—on they came. Now they were passing under the window from which the anxious neck is craning itself.

Ha! ha! did "maid in the kitchen," or "mistress in the parlor" get the benefit of that rare interview?

"Boys (Uncle Mose, was upward of sixty), we are all at sixes and sevens here to-day. You must hurry in now, and do the very best you can for us, in the way of a dinner. I never saw one of you yet that couldn't cook. Hurry up now boys! Plenty o' chickens and vegetables round."

The old guard soon entered the field looking somewhat astonished and obfuscated, it is time, but with amiable white teeth grinning consent on shiny black faces. The Waterloo cry, "Up and at them" was on our hero's lips. Alas, poor hero! Alas poor Waterloo.

It must be confessed that our Napoleon beat another and most inglorious retreat as he bargained with his subs for a half month's pay in advance if they would only get up *a slashing fine dinner in a few minutes and not let him hear the first blessed word about it!*

Having exercised this better part of valor "Mars Phil" turned on his heel, but before he left the kitchen he delivered himself in and of the following order.

"Now boys, there's one thing that I want you to bear in mind: This water-can is never to be left without water, nor this woodpile without cut wood while this kitchen stands here!"

Sara of old, in her hiding-place, took no sweeter laugh of half doubt, half pleasure, at the bit of angelic intelligence that came to her on the sly than did her namesake at this delightful but only half credited piece of information.

After this *coup d' etat* our general's mind felt relieved. He could turn his back on the kitchen! The mercury began to rise in him. He was actually setting up his mouth for a good smoke. But have the fates bound themselves by oath that our poor undertaker shall not be allowed one ray of comfort this livelong day by which he can see how "TO KEEP HOUSE WITHOUT TROUBLE" and to "GIVE LESSONS IN THAT GRAND SCIENCE" that he should be so set upon!

Just at this eventful crisis who should come full tilt against his improving progress but the abominable and indomitable Kinky. This time she was butting her head and tossing herself frantically as if she might be performing on the "Scotch fiddle" and dancing the Highland fling" thereto.

"Mars Phil, O! *Mars Phil, furder* law's sake take dis hear bee out'n my head. Der bees is er swarmin! der bees is er swarmin!"

"I don't care a continental if they are," thundered the enraged Philip, who in some strong home-made Saxon went on to inform her how he "wished to heaven they'd all swarm in her wool."

"Laws, Mars Phil, I hain't made no bees swarm" answered Kinky, quite appeased since she had caught and killed her own head bee. Then reflectively,

"But w'ut us got ter do, Mars Phil? Taint nobody heah kin hiv'm cep tis Sah-ann. Bettr jss' ring der bells en beat der pans tell somebody cum long—hadn't us?"

Mars Phil vouchsafed no reply. He was too indignant and too far spent to deliver another Philipic.

The inconsiderate conduct of these bad bees on this hot and horrid mid-day seemed to his offended and overstrained dignity nothing short of a personal insult.

He shook back the hair viciously from his hot temples and passed on. It did not appease his wrath to enter the dining room.

There was the breakfast table in as wild confusion as if nothing had been touched.

The hot sun and the flies were holding high carnival over crums, butter, milk and night-smirched lamps.

He walked into the hall. Note, water-bucket, everything lying around loose, giving that rakish up-all night look that is so distressing to an orderly housekeeper. He went up to his chamber, not exactly "weeping as he went," like David, but feeling like that old warrior did sometime, weak and worsted, as if he had had a hard day's fight, and things had got him under.

He stumbled over the dust pan, and was near upsetting a slop bucket.

Not a bed was made up. Not a room swept. Heavens! He remembered also that the butter was still slushing in the churn, and the hatching hens, were they on the "nesses" or off—?

Just at this supreme moment he remembered, also, something else. Ah memory, what a torture chamber thou art, or what a palace called beautiful!

Yes. He suddenly remembered something that had never come to his mind before.

AN ENGAGEMENT—Presto!

Next minute he was leaving word for "Mis' Neeta" that he had promised Mr. Saunders, he would meet him to-day at Haines' mill to examine some new wheat. Not to wait dinner for him as he might not be back till late—"

"Routed—routed—foot, horse and dragoon!" shouted both ladies at once, making the parlor ring with their laughter.

"Must we 'eat my old hat' for dinner?" called Neeta from the window as he rode away.

But this was a mere breeze to the gale that was blowing up in the kitchen.

No sooner had our hero quit the field than Sarann came out of her hiding place and did the rest of the routing. The old guard was ordered off in sound terms, not, however till Mars Phil's order was iterated and reiterated with commanding emphasis.

"Nebbr hab dat water-can empter gin while dis kitchen stans heah, en nebbr hab dat air wood-pile out'n plenty chop wood!"

This delightful direction had put Sarann in fine working order. With Kinky's aid she had the house cleaned, table set, butter returned to the spring house, the innings and outings of the chickens scored, and dinner ready as if by magic.

In the house, no sooner was "*der wussist mummr*" lost to sight than the sewing machine was brought out, and Roly's jacket finished, and at five o'clock P. M. both ladies, with babies and Kinky drove off to the picnic and made a merry ending to this funny day.

Reported by SISTER TARPLEY.

Domestic Recipes.

Irish Stew: Put two pounds of mutton on to stew in water enough to cover it. Salt and pepper it. When tender take out of the kettle and cut into small pieces; have ready one dozen potatoes sliced and three sliced onions; put all together in a saucepan and stew till the potatoes are done; then stir in enough flour to make a thick gravy.

Chicken and Macaroni: Cut up a tender chicken in neat pieces and fry brown in fresh butter with a few strips of bacon, keeping the pan covered. Season well with pepper and salt. Boil a handful of small Italian macaroni for twenty minutes, drain through a colander, add a large piece of butter, a cup of rich, strong gravy, and, if liked, some grated Parmesan cheese. Arrange the chicken on a very hot dish around the central pile of macaroni, which must be thoroughly moist and rich with gravy and butter.

The Comet Pear.

A new candidate for supremacy in beauty and earliness in the pear line is the Comet; now first offered to the public by John S. Collins of Moorestown, N. J. It has been grown to a limited extent in Ulster County, New York, latitude 42 degrees, for a few years. The trees are said to be very vigorous and healthy, and to bear young and abundantly; the fruit is of good quality, large size, splendid color, (red and yellow); has ripened and been marketed in July, grown at the above named location, and sold in New York market each year at high prices. The comparative value of early pears may be estimated by the fact that Bartlett pears, grown in Virginia this year sold in New York at $7 per bushel.

Baltimore Markets—Oct. 3.

Breadstuffs.—*Flour.*—The market is firmer in tone under a fairly active demand. We quote as follows: Howard street and Western Super $2.25@2.65; do. do. Extra $2.75@3.50; do. do. Family $3.75@4.75; City Mills Super $2.37@2.75; do Extra $3@3.50; do. (Rio brands) Extra $4.62@4.75; Baltimore Winter Wheat Patent $6.00; do. High-grade Family $5.50; do. Second-grade Extra $5.25; do Third-grade Extra $5.00; Fine $2@2.25; Rye Flour $3.75@4.00; Corn Meal per 100 lbs. $1.50@1.60; Colbert's Excelsior Graham 7.00.

Wheat.—There is only a moderate supply for Southern, and the market is somewhat easier. The sales were at 85@78 cts. for very common and tough, 85@86 cts. for fair, 87½@90 cts. for good to choice Fults, and 96 cts. for choice long-berry. The market for western opened steady and closed easy at about the offering prices. The closing quotations were at 85½@85¾ cts. for spot, 85¾@86 cts. for October, 87¾@88 cts. for November and 89¾@90 cts. for December.

Tobacco.—The receipts of Maryland are very small, and the market is quiet but firm. Good qualities are in active demand. The market for Ohio crop is firm, with a good demand for the red and spangled varieties particularly. We quote Maryland inferior frosted $2@3; do. sound common $3.50@5; good common $5.50@6.50; do. middling $7@8.50; do. do. good fine red $8.50@11; do. fancy $12@14; upper country $8@15; do. ground leaves, $3@8. Ohio inferior to good, $4@5; greenish and brown $7@8; do. medium to fine red $8@11; common to medium spangled $7@11; do. fine spangled and yellow $12@20; do. air-cured medium to fine $7@14.

Live Stock—*Beef Cattle.*—The quality of the offerings generally was of an inferior order. Prices ranged as follows: Best $5.25@5.75; that generally rated first quality $4.75@5.25; medium or good fair quality $3.75@4.25; ordinary thin Steers, Oxen and Cows $2.50@2.75. Extreme range of prices $2.50@5.75. Most of the sales were from $3@5 per 100 lbs.

Pure Dissolved S. C. Bone.

Bone Meal.

Ammoniated Dissolved Bone.

Pure Dissolved Bone.

POWELL'S TIP TOP FERTILIZER.

POWELL'S POTATO PRODUCER.

Powell's Bone and Potash Fertilizer

☞Everything connected with Fertilizer business of best quality. For Sale Cheap. Send for Pamphlet and Samples.

BROWN CHEMICAL CO.

16 LIGHT STREET,

BALTIMORE, MD.

BUCKEYE FEED MILL AND HORSE POWER COMBINED.

Geared to run 350 Revolutions per Minute. Grinds Corn, Oats, Barley and Rye at the Rate of 10 to 15 Bushels per Hour.

BUY IT BECAUSE IT IS THE BEST. Send for Circular.

H. C. STAVER IMPLEMENT CO. 31 N. Canal St. CHICAGO, ILL.

Messrs H. C. Staver Implement Co., Chicago, Ill. KANSAS CITY, MO., May 24th, 1884.

Gentlemen:—In answer to yours relating to the sales of Buckeye Feed Mills, will say that out of nearly 400 of these mills that we have sold during the past year, we have had, comparatively speaking, no trouble, and with very few exceptions they have given universal satisfaction. We are already receiving letters from our customers asking us to be sure and make no trade for Buckeye Feed Mills for the coming year until they have seen us, as they are anxious for the agency for them for the coming winter. The trade will be very large on these mills as they are the best that have been put on the market so far, and outside of their grinding qualities we consider them the best two horse power we have ever seen. At present prospects we should not be surprised if we should sell 1,000 of your mills during the coming year.

Yours truly, DEERE, MANSUR & CO.

JERSEY CATTLE.

Young Cows, Heifers and Calves, of the best Butter Strains, and in Calf to well known sires. Received per steamer "Nessmore," and now at Quarantine:

BOBBY'S DIANA, 6379, J. H. B., sire Bobby, 908, in Calf to Nero-du-Coin, 463

AUGEREZ'S VIOLET, 6005, J. H. B., sire Napier 2nd, 346, in Calf to Everton's King, 390.

INDUSTRIEUSE 2nd, sire Napoleon, 377, in Calf to Baron Cicero, 482.

BLENHEIM MAID 2nd, sire Napoleon, 377, in Calf to Admiral, 348.

ST. JOHN'S DAISY, sire St. John, 316, in Calf to Augerez's King, 390.

HUREL'S BEAUTY, sire Napoleon, 377, in Calf to Admiral, 348

LEMON PEEL'S DAISY, sire Lemon Peel, 320, in Calf to Baron Cicero, 484.

NELLY OF VINCHELEZ, sire St. John, 316, in Calf to La Fontaine's Lad, 390.

YELLOW PEEL 2nd, sire Baron, 389, in Calf to Gendarme, 434.

MISCHIEVOUS GIPSY 2nd, sire Ice, in Calf to Farmer's Prince, 540.

LADY OF THE MANOR, sire Orange Peel, 288, in Calf to Day Flower, 429.

CETEWAYO'S MARY, sire Cetewayo, 344, in Calf to Buttermaker Boy, 492.

PEEL'S BUTTERCUP, sire Orange Peel, 288, ten months old.

PERROT'S BUTTERCUP, sire Perrot, 342, six months old.

WOLSELEY'S PRIDE, sire Wolseley, 401, six months old.

PRIDE OF CAROLINA, sire Forget-me-not, 291, in Calf to Perrot, 342.

HILLSIDE MAID, 6118, J. H. B., dropped Calf 14th August, 1884, by Conquest, 354.

CECERO'S PRIDE, sire Cicero, 268, dropped Calf 1st August, 1884, by Nero-du-Coin, 463.

LEMON PEEL'S BEAUTY, sire Lemon Peel, 320, dropped Calf 30th July, 1884, by Baron Cicero, 482.

VESTINA 2nd, sire King, 236, dropped Calf 19th July, 1884, by Duke of Trodar, 430.

BROOKDALE'S BUTTERCUP, sire Nero, 248, dropped Calf 9th July, 1884, by Perrot 342.

LEMON PEEL'S FANCY, sire Lemon Peel, 320, in Calf to Baron Cicero, 482.

GOLDEN LISIERE, 6207, J. H. B., in Calf to Perrot, 342.

The above are the second direct importation of the finest young registered Jerseys ever offered for sale at Baltimore, and have been selected with great care by the celebrated judges, Messrs. E. J. Arnold and F. Le Brocq. To be sold at auction **Friday Oct. 10, 1884, at 11 o'clock, at Kearney's Stables, Cor. St. Paul and Centre Sts., Balto.,** where the Herd will be on exhibition from October 4th till date of sale. For particulars apply to

M. R. TUCKER & CO.
11 South Gay Street,
Baltimore.

The Inbred Stoke Pogis Rioter Bull

MARJORAM'S RIOTER 5991.

Sire: RIOTER VULCAN 5380, by **Stoke Pogis.**
Dam: MARJORAM 2d, 12805, by **Stoke Pogis.**

Will stand to serve a few approved cows, at the farm of my brother, CHAS. E. HAND, near Catonsville, Baltimore County, Md., during September and October. Application may be made to Mr. CHAS. E. HAND or myself,

THOS. J. HAND,
No. 1 Broadway, New York.

PEAR HEADQUARTERS
PEACH and other FRUIT TREES.
NEW BERRIES MAY KING, MARLBORO
EARLY CLUSTER!
NEW GRAPES Pa'kanoke, Ulster, NIAGARA, Hayes.
CURRANTS, &c. Catalogue free.
J. S. COLLINS, Moorestown, N. J.
COMET KIEFFER

THE
LIGHTNING HAY KNIFE
IS THE
BEST
KNIFE IN THE WORLD!

To Cut HAY & STRAW from the Mow, Stack, or Bundle.

To Cut CORN STALKS or BALED HAY, or **Unthreshed OATS** in bundles, into Fine Feed.

To Cut ENSILAGE from Silo. **To cut PEAT,** and **Ditching in Bogs** and **Meadows,** severing grass roots, and cutting off bush roots an inch through, readily. Farmers having any of this work to do, should not be without a Lightning Hay Knife, and would not, after an hour's trial. If you feed only a horse or cow, it will **PAY YOU** to have a Lightning Hay Knife, *to cut fresh hay from the side of the mow or stack,* instead of pitching from the top, where it is drying up and losing its best qualities. **IT PAYS** to use a Lightning Hay Knife to cut a load of Clingy Clover Hay into sections, so as to pitch off easily. This is **THE KNIFE** which Cuts **Frozen Hay** readily. Manufact'd only by

HIRAM HOLT & CO. East Wilton, Me., U. S. A.

For sale by Hardware Merchants & the trade generally

NEW GOOSEBERRY

We now offer for the first time a very valuable new variety. Circular giving full description and price, together with a handsome colored plate, free. Address, ELLWANGER & BARRY, Mount Hope Nurseries, Rochester, N. Y.

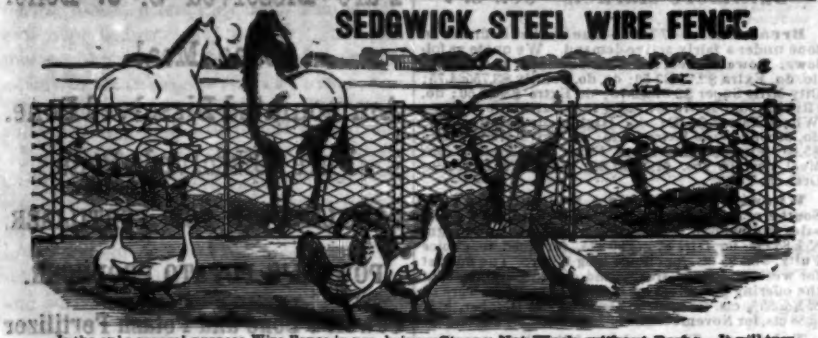
Mention this paper.

The Victor Rock Drill

WELL, BORER AND PROSPECTOR.

The *Diploma* and *Prize Medal* awarded it at the "Centennial" in 1876. *Twenty-six of these* hand machines ordered in one day. 10 Good active Agents can clear $125 per week. Send for Circulars and Terms. Address W. WEAVER, Phœnixville, Pa.

SEDGWICK STEEL WIRE FENCE.



Is the only general purpose Wire Fence in use, being a **Strong Net-Work without Barbs.** It will turn dogs, pigs, sheep and poultry, as well as the most vicious stock, without injury to either fence or stock. It is just the fence for farms, gardens, stock ranges and railroads, and very neat for lawns, parks, school lots and cemeteries. Covered with rust-proof paint (or galvanized) it will last a life-time. It is **Superior to Boards or Barbed Wire in every respect.** We ask for it a fair trial, knowing it will wear itself into favor. The **Sedgwick Gates,** made of wrought iron pipe and steel wire, defy all competition in neatness, strength and durability. We also make the best and cheapest All Iron Automatic or Self-Opening Gate, also Cheapest and Neatest all Iron Fence. **Best Wire Stretcher and Post Auger. Also Manufacture Russell's excellent Wind Engines for pumping water,** or geared engines for grinding and other light work. For prices and particulars ask hardware dealers, or address, mentioning paper,

SEDGWICK BROS. Mf'rs., Richmond, Indiana.

EVERY MAN HIS OWN MILLER.

ECLIPSE POWER WIND MILLS,

ADAPTED FOR
GRINDING FEED AND MEAL, SHELLING CORN, CUTTING FEED AND FODDER, SAWING WOOD, CHURNING, PUMPING WATER.

BUILT IN 10 SIZES, FROM 13 TO 50 FEET WHEELS.
SEND FOR SPECIAL CATALOGUE.

We have a 14 ft. Wheel erected at our warehouse, and **invite all interested to call and examine it.** We also carry in stock IRON FEED GRINDERS for grinding corn, and other grain, corn on cobs, bones, drugs, spices, coffee, etc. Arranged to run by horse, wind or steam power.

FROST-PROOF STOCK TANKS. ROUND RESERVOIR TANKS. Hand, Wind Mill and Steam Pumps, Pipe and Fittings, etc.

SEE US BEFORE BUYING ELSEWHERE.

GOOD AGENTS WANTED.

Water Works of every description.

MALVIN B. SHURTZ & CO.

19, 21 and 23 E. Pratt Street, Cor. President, Baltimore, Md.

FRANKLIN DAVIS. EDW. H. BISSELL.

Baltimore Nurseries.

FRANKLIN DAVIS & CO.,

400 Acres in Nursery Stock. 100 Acres in Orchards. 100 Acres in Small Fruits.

WE offer to our customers an immense stock of APPLES, PEACHES, CHERRIES, APRICOTS, GRAPES, &c., all the standard sorts. Also the new varieties of FRUITS, ORNAMENTAL TREES, SHRUBS, ROSES, &c. Wholesale and Retail. To dealers we can offer stock on favorable terms, and the best facilities for packing and shipping. Catalogues mailed on application.

FRANKLIN DAVIS & CO.

Office N. E. Cor. Baltimore and Paca Sts. BALTIMORE, MD.

Clairmont and Furley Hall Nurseries.

ESTABLISHED 1828. **TREES, PLANTS, EVERGREENS, &c.** 310 ACRES.

Extensive stock of Apples, Pears, Peaches, Plums, Cherries, Apricots and Damsons. Currants Blackberries, Strawberries, Asparagus Roots, &c. Large and rare assortment of SHADE and ORNAMENTAL Trees, Flowering Shrubs, &c.; embracing many NEW foreign varieties, recently imported by us. Catalogues and price-list free upon application, also a lithograph of our "**Chairs Choice**" **Peach,** which is considered the finest late yellow-free-stone known.

P. O. Box 408. WILLIAM CORSE & SONS, Baltimore, Md.

Office 18 Second Street, opposite Post Office.

"Whitelock's Vegetator"

AMMONIATED SUPER PHOSPHATE
W. WHITELOCK & CO'S TRADE MARK
VEGETATOR
BALTIMORE
167
THE CROP PRODUCER.

FOR WHEAT AND GRASS.

Farmers, if you wish to obtain large yields of the above crops and get the worth of your money, use the best Fertilizer in the market—

"WHITELOCK'S VEGETATOR."

Price, $36.00 per Ton of 2,000 lbs. New Bags, 167 lbs. Each.

If you desire a lower price manure, which is the cheapest and best for the money, purchase our

"Sunnyside Pure Bone & Dissolved Phosphate."

Price, $30.00 per Ton of 2,000 Pounds. New Bags, 167 Pounds Each.

To those desiring a Dissolved Bone Phosphate, without Ammonia, the action of which is superior to most articles sold as Acid Phosphate or South Carolina Bone, we offer our

"Soluble Phosphate and Potash Fertilizer."

Price, $20.00 per Ton of 2,000 Pounds. New Bags, 167 Pounds Each.

The above brands are sold and delivered, 12 bags to the ton, and in fine and dry condition for drilling.

EXTRA MOISTURE IN A FERTILIZER ADDS TO THE COST.

You should count the cost of the Fertilizer by the cost per acre. As the soil requires more of a lower grade fertiliser to the acre than one of a higher grade, the consequence is that the extra quantity required, the extra labor in applying it, and the poor results obtained, make the lower grade of goods more costly. With perfect confidence we refer buyers to all who have applied our Fertilizers.

MILLER, LIPPINCOTT & CO.

(SUCCESSORS TO W. WHITELOCK & CO.)

44 SOUTH ST. BALTIMORE, MD.

SAUL'S
NURSERIES
WASHINGTON, D. C.

THE undersigned offers a fine stock of the following: New Pears, New Peaches, New Cherries, New Grapes, New Strawberries, &c., Fruit Trees of all kinds.

An extensive stock, viz: Plums, Cherries, Apricots, Apples, suitable to the South, etc. Grape Vines, Strawberries, Raspberries, etc., new sorts Evergreens, New Ornamental Trees, New Shrubs, etc., small sizes, suitable for Nurserymen, as well as large stock in great variety.

DUTCH BULBS—Large importations direct from the leading growers in Holland. First quality Bulbs, Hyacinths, Lilies, Tulips, etc. New and rare Greenhouse Plants, Winter Blooming Plants.

NEW ROSES—Bennett's Hybrid Tea, Queen of Bedders, New French and English Roses, &c.

☞Everything at low rates. Catalogues mailed to applicants.

JOHN SAUL, Washington, D. C.

FOR FALL PLANTING.

TREES The largest assortment in the country of the best *Old* and *New* Fruit and Ornamental Trees, Shrubs, Peonies, Hedge Plants, Grape Vines, Small Fruits, etc. Abridged Catalogue mailed free.

ROSES. A Superb Collection. Carefully compiled Catalogue describing best *Old* and *New* varieties mailed free.

BULBS New Illustrated Catalogue, containing lists of the choicest bulbs, at lowest prices, now ready and mailed free.

NEW GOOSEBERRY.

We now offer a very valuable new variety. Circular giving full description and price, together with a handsome colored plate, and *New* Catalogue of Small Fruits, free. Address,

ELLWANGER & BARRY,
Mount Hope Nurseries, Rochester, N. Y.

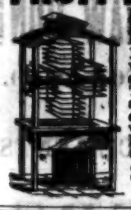
Mention this paper.

Farm in Baltimore Co. For Sale,

Or Exchange for City Property.

Containing 150 acres; about 25 to 30 acres in thriving timber, principally oak and chestnut; well watered and admirably adapted to a dairy or market farm; the soil is kind and susceptible of the highest improvement; it is now principally set in grass It is at the 15-mile stone on the York turnpike, fronting on both sides of the road, and five stations on the Northern Central R. R.; can be reached at distances of 1 to 3 miles, by good county roads. This is the circle of the members of the Gunpowder Club, and is undoubtedly one of the best locations in the county. Churches of all denominations, and schools, public and private, are convenient. The York turnpike is one of the very best, and the distance from the city permits a round-trip a day for wagoning. Probably no healthier spot in the world can be found. It is laid off in fields of 12 to 15 acres, to most of which easy access is had to water for stock. The dwelling, which is commodious, and large barn, are of stone, with other outhouses, and though old, can be made very comfortable at a reasonable expense; and there are several admirable sites for residences on the premises. This property could be advantageously divided into small lots and sold at a very great advance on the price asked for the whole. Lots on the road have brought as high as $500 an acre, and the extent of the frontage on the turnpike, in the hands of an enterprising man, could be turned to excellent account, but the present owner is indisposed to take the trouble requisite to accomplish this, and would prefer selling the whole together A gentleman with a very small income independent of the farm, could live on this place without labor, saving the rent of a city residence, by renting the fields on shares to be farmed under his control, reserving a garden and stabling, and the pasturage necessary for his stock. A small tenant's house on the premises would rent for the amount of taxes on the place. As I cannot occupy the place myself, I am willing to sell it on the most reasonable terms, or exchange it for city property in a good locality. For further particulars apply to the subscriber, at office of *American Farmer*. SAM'L SANDS.

THE WILLIAMS FRUIT EVAPORATOR!



Is the PIONEER & LEADING MACHINE OF ITS KIND IN THE MARKET.

It has been in use for 10 years, with highly satisfactory results. We make 3 SIZES The two smaller sizes for convenience of small capitalists, and for sections where the fruit crop is not very large. Send for Descriptive Circular and testimonials to

S. E. & J. M. SPROUT,
MUNCY, PENNA.

New York

'Singer' Model Sewing Machine on 7 A Cilder, Ruffler, Tucker, Five Hemmers, Binder, Thread Cutter, Needles, Oil and full outfit with each.—Guaranteed to be perfect. Warranted 5 years. Don't pay double for machines no better, when you can try these before you pay a cent All late improvements. Runs light with little noise. Handsome and durable. Circulars with hundreds of testimonials free

$15

GEO. PAYNE & CO, 47 Third Ave., Chicago, Ill.

Get a Trade for your Butter and keep it.

BUTTER PRINTER
Your own Print or Monogram on each Pound in a Guarantee of Genuineness, and will secure GILT EDGE PRICE for GILT EDGE BUTTER Farmers and Dairymen
A. H. REID Manufacturer of CREAMERIES Dairy Supplies, &c. 1435 Market St. PHILA., Pa. Send for Catalogue.

BUTTER SHIPPING BOX

will find our plan of Printing and Shipping the only way to get ahead of all Rogus Butter, which is the Dairyman's Curse.

SCARLET CLOVER SEED.

(Trifolium incarnatum.)

100 Bags for Sale. It is as hardy as other Clovers.

Thomas B. Price,
Lawrenceville, Brunswick Co., Va.

HARD WOOD ASHES AS A FERTILIZER.

150 Car loads for sale. Can be delivered at any railroad station in the Eastern, Middle or Southern States in car loads of 14 tons. Dry unleached ashes from 25 cts. to 30 cts. a bushel; leached ashes from 15 to 18 cts. a bushel, according to locality. Jas. Harmess, Detroit, Mich.

JOSHUA THOMAS & BRO.

STEAM

Agricultural and Mill Machinery

ECLIPSE AGRICULTURAL ENGINE

FIRST PREMIUM WHEREVER EXHIBITED.

Best, Cheapest, and most Economical Engine in the Market.

STEVENS' ENGINE AND THRESHER,

Osborne Mowers, Reapers & Self-Binders.

Superior Grain and Fertilizer Drills, Chieftain Horse Rakes,
Champion Force Pump, Cucumber-Wood Pumps,
South Bend Chilled Plows, Little Giant Sulky Plows,
Lansing Wheel and Float Harrows, Circular Saw Mills,
Portable Grist Mills, Millstones, Bolting Cloths,
Smut Machines, Leather and Gum Belting, &c., &c.

No. 53 Light St., Baltimore, Md.

THOROUGHBRED

Registered Lincoln Sheep

From the celebrated stock of T. Walter & Son, West Chester, Pa. 1 Ram, Duke of Md., 3 years old; 1 Ewe, Duchess of Md., same age; 2 Yearling Ewe Lambs of the above; 2 Ewe Lambs do. Address

T. W. Lawford,
226 E. Chase St., Baltimore, Md.

PRATT'S ASTRAL OIL

WILL NOT EXPLODE.

Wholesale and Retail.

LAMPS OF EVERY DESCRIPTION.

For Sale by W. & H. SPILCKER,

Agents for Chas. Pratt & Co., New York. } 163 Baltimore St.

Imperial Wine Vinegar.

NONPAREIL CIDER VINEGAR.

STRICTLY pure and reliable. Many imitations. costing 3 cents a gallon, are sold as Cider Vinegar. To guard against deception, observe that packages bear our brands.

Fresh APOLINARIS WATER.

FREDK. M. BOLLMAN, Importer
63 S GAY STREET.

G. W. LEHMANN, Ph. D. *Chemist and Metallurgist Baltimore Copper Works.*
W. MAGER, *Formerly Chemist of N. C. Fertilizer Central Station*

LEHMANN & MAGER,

CHEMISTS AND ASSAYERS,

57 S. GAY ST., BALTIMORE, MD.

ANALYSES of all descriptions—Manures, Soils, Chemical Fertilizers, Ores of Gold and Silver (by fire process), Copper, Lead, Manganese, etc. Clays, Coal, Limestone and other minerals. Water for steam, manufacturing and household use. Mineral waters and various products of art. Terms moderate.

"THE BEST IS CHEAPEST."

ENGINES, Horse Powers **THRESHERS** SAW-MILLS, Clover Hullers

(Suited to all sections.) Write for FREE Illus. Pamphlet and Prices to The Aultman & Taylor Co., Mansfield, Ohio.

We will send you a watch or a chain BY MAIL OR EXPRESS, C. O. D., to be examined before paying any money and if not satisfactory, returned at our expense. We manufacture all our watches and save you 50 per cent. Catalogue of 250 styles free. EVERY WATCH WARRANTED. Address STANDARD AMERICAN WATCH CO., PITTSBURGH, PA.

STEAM ENGINES

Portable and Agricultural. Send for circulars. Wood, Taber & Morse, Eaton, N. Y.

NEW

'Singer' Model Sewing Machines only $15

including an $8.00 set of extra attachments of 9 pieces and needles, oil and usual outfit of 12 pieces with each. Guaranteed perfect. Warranted 5 years. Handsome, durable, quiet and light running. Don't pay $30 to $50 for machines no better. We will send ours anywhere on trial before paying. Circulars free. Save $15 to $35 by addressing

GEO. PAYNE & CO., 47 Third Ave., Chicago, Ills.

DRUNKENNESS

CURED IN ITS VARIOUS STAGES.

DR. HAINES' GOLDEN SPECIFIC

positively destroys the appetite for alcoholic liquors in 20 days, tones the stomach, purifies the blood, aids digestion, strengthens the nerves. Can be administered without the knowledge of the patient by simply placing it in tea, coffee, or articles of food. It never fails. Cures guaranteed. For further information, address

GOLDEN SPECIFIC COMPANY,
185 RACE STREET, CINCINNATI, OHIO.

ALL GARDEN SUPPLIES.

ROB'T J. HALLIDAY,

238 W. BALTIMORE STREET,

BALTIMORE, MD.

My Catalogue for 1884 now ready and mailed free to all applicants. It contains all the new and popular plants for the Garden and Greenhouse; also Vegetable and Flower Seeds, and all garden requisites.

PENNSYLVANIA ROUTE.

FORMED by the Northern Central and Pennsylvania Railroads on the West, Northwest and Southwest to

PITTSBURG, CINCINNATI, LOUISVILLE, INDIANAPOLIS, CHICAGO, ST. LOUIS, and OTHER PROMINENT POINTS.

Baltimore and Potomac, and Alexandria and Fredericksburg Railways on the South to

WASHINGTON, RICHMOND, and all points in the ATLANTIC AND GULF STATES.

The Only All Rail Line with no Omnibus Transfer at Washington.

Northern Central, and Philadelphia and Erie Railways on the North to

HARRISBURG, WILLIAMSPORT, ELMIRA, WATKINS GLENN ROCHESTER, ERIE, BUFFALO, NIAGARA FALLS.

☞ Baggage called for and checked at hotels and private residences through to destination. Sleeping and Parlor Car accommodations secured.

Through Tickets sold and information given at Company's office,

N. E. Cor. Baltimore and Calvert Sts., At Depot N. C. Railway,

At Union Depot, Charles St., Station, And Pennsylvania Ave. Station,

CHAS. E. PUGH, General Manager. J. R. WOOD, Gen'l Passenger Ag't. Penna. & N. C. R. R.

DEDERICK'S HAY PRESSES.

are sent anywhere on trial to operate against all other presses. the customer keeping the one that suits best.

Order on trial, address for circular and location of Western and Southern Storehouses and Agents.

P. K. DEDERICK & CO., Albany, N. Y.

DOUBLE HARPOON HORSE HAY FORK

No Farmer can afford to be without it. It will SAVE its cost many times. BEST IN THE WORLD. Send for Descriptive Catalogue. *Free.* Nanseek Mf'g. Co. Kennett Square, Chester Co. Pa.

THE LINE SELECTED BY THE U. S. GOV'T TO CARRY THE FAST MAIL

Burlington Route.

GOING WEST.

ONLY LINE RUNNING TWO THROUGH TRAINS DAILY FROM

CHICAGO, PEORIA & ST. LOUIS,

Through the Heart of the Continent by way of Pacific Junction or Omaha to

DENVER,

or via Kansas City and Atchison to Denver, connecting in Union Depots at Kansas City, Atchison, Omaha and Denver with through trains for

SAN FRANCISCO,

and all points in the Far West. Shortest Line to

KANSAS CITY,

And all points in the South-West.

TOURISTS AND HEALTH-SEEKERS

Should not forget the fact that Round Trip tickets at reduced rates can be purchased via this Great Through Line, to all the Health and Pleasure Resorts of the West and South-West, including the Mountains of COLORADO, the Valley of the Yosemite, the

CITY OF MEXICO,

and all points in the Mexican Republic.

HOME-SEEKERS

Should also remember that this line leads direct to the heart of the Government and Railroad Lands in Nebraska, Kansas, Texas, Colorado and Washington Territory.

It is known as the great THROUGH CAR LINE of America, and is universally admitted to be the

Finest Equipped Railroad in the World for all classes of Travel.

Through Tickets via this line for sale at all Railroad Coupon Ticket Offices in the United States and Canada.

T. J. POTTER, Vice-Pres. and Gen. Manager.
PERCEVAL LOWELL, Gen. Pass. Ag't, Chicago.
JNO. Q. A. BEAN, Gen. Eastern Ag't, 317 Broadway, New York, and 306 Washington St., Boston.

PENSIONS

for any disability also to Heirs. Send stamps for *New Laws.* Col. L. BINGHAM, Attorney, Washington, D. C.

GRAPE VINES

Also other small fruits and all older varieties. Grapes, Extra quality. Warranted true. Cheap by mail. Low rates to dealers.

Prentiss

Pocklington, Duchess, Lady Washington, Vergennes, Moore's Early Jefferson, Early Victor, Brighton.

LARGEST STOCK IN AMERICA
Prices reduced. Illustrated Catalogue Free.
T. S. HUBBARD, Fredonia, N. Y.

TEACHERS WANTED—10 PRINCIPALS, 12 Assistants, and a number for Music, Art, and Specialties. Application form mailed for postage. SCHOOL SUPPLY BUREAU, Chicago, Ill. Mention this Journal.

FAY'S CELEBRATED WATER-PROOF
MANILLA ROOFING

Resembles fine leather; for Roofs, Outside Walls, and Inside in place of plaster. Very strong and durable. Catalogue with testimonials and samples FREE. Established 1866.
W. H. FAY & CO., Camden, N. J.

COTSWOLD SHEEP
FOR SALE.

Imported "BARON THAME" of 23½ lbs. fleece. Yearling Rams (pedigreed) 15½ to 17 lbs. fleece; and Ewes of all ages, to be bred next fall.

ED. C. LEGG,
KENT ISLAND, MD.

RICHMOND COLLEGE.
RICHMOND, VA.

The next session begins SEPTEMBER 18TH and continues nine months.

FACULTY.

EDMUND HARRISON, A. M., Prof. of Latin.
H. H. HARRIS, M. A., LL. D., Prof. of Greek.
A. B. BROWN, D. D., LL. D., Prof. of English.
EWD. B. SMITH, M. A., Prof. of Mathematics.
CHARLES H. WINSTON, M. A., LL. D., Prof. of Physics.
B. PURYEAR, A. M., LL. D., Prof. of Chemistry.
WM. D. THOMAS, M. A., D. D., Prof. of Philosophy.
Profs. SMITH and HARRIS, Modern Languages.

EXPENSES OF A RESIDENT STUDENT.

Two hundred and four dollars, per nine months' session, cover all the expenses of entrance fees, tuition, board, fuel, lights and washing.

Eighty-seven dollars and fifty cents will meet the expenses of a non-resident student.

The College grounds, comprising thirteen acres of land, have been greatly improved and beautified in the last two years. The institution offers very superior advantages in the healthfulness of its location, in its abundant provision for the comfort and convenience of students, and in the extent and thoroughness of its course of instruction.

For Catalogues, giving full information, apply at the bookstores, or address

B. PURYEAR,
Chairman of the Faculty.

SALT

Ashton's, Phœnix, Deakin's, Evans', Worthington's full and quarter sacks. Dairy, Rock, Fertilizing Salt, containing 7 per cent. Sulphate Potash. Also,

KAINIT,
OR GERMAN POTASH SALT.

Warranted Genuine and Full Standard: also Calcined Kainit, Muriate Potash, Nitrate Soda, &c.

Cargoes constantly arriving and all for sale in lots to suit by

JAS. BONDAY, JR. & CO.
58 SOUTH STREET, Baltimore, Md.

Send for one of our Books on use of Kainit free of cost.

WINTER OATS!

For Sowing in September, $1.00 per bushel. Weigh Forty Pounds to bushel, Struck Measure.

ROBERT J. HALLIDAY,
238 West Baltimore Street,
BALTIMORE.

BROWN LEGHORNS!

I am now prepared to ship superior Brown Leghorn Chicks—breeding stock, from the best yards in the country.

Also a few trios White Leghorns. Prices reasonable. Address for particulars,

W. F. STEIGER, Jr.
Laurel, Md.

A GEORGIA FARM FOR SALE OR LEASE!

Will sell or lease for cash, or on time with a low rate of interest if properly secured, our Courta County Farm—forty five miles from Atlanta, and seven miles from several Railroad stations. Consisting of 1,300 acres of land—1 000 acres open in good condition, and very productive; (one hundred and seventy-five acres well set in orchard grass and red clover, and fifty acres in bermuda grass); three hundred acres in timber—oak, hickory, poplar, etc. Well watered, splendid improvements, good society, convenient schools and healthy locality. Eleven mules, thirty odd head native cattle and fifty hogs. A full complement of agricultural machinery and farm implements of most approved kind.

PRICE, $20,000. For further particulars, apply to

S. J. & A. W. HILL,
Atlanta, Ga.

OPIUM and WHISKY HABITS cured at home without pain. Book of particulars sent Free.
B. M. WOOLLEY, M. D., Atlanta, Ga.

DON'T FAIL TO EXAMINE

—OF THE IMPROVED—

HAGERSTOWN OR "EMPIRE" DRILL

BEFORE BUYING ANY OTHER.

Unexcelled in finish; superior in manufacture; first in quality; each joint in frame made with mortise and tenon; using reversible wrought-iron spindles, patent automatic cut-off fertilizer feed and steel drag bars. Each drill furnished with double registering surveyor, rear tube shifter, whiffletrees, and neck-yoke.

Force feed grain, fertilizer and seed distributers, capable of sowing, with unparalleled continuity and exactness, each and every variety of grain, seed and fertilizer; perfectly adjustable to quantity; no wasting of seed; positive in distribution; light in draught and convenient in adjustment; reliable in operation, and fully warranted.

FERTILIZERS.

GRIFFITH & TURNER'S ANIMAL BONE PHOSPHATE. A high grade Phosphate, a complete fertilizer, always gives good results.

GRIFFITH & TURNER'S AMMONIATED PHOSPHATE.

GRIFFITH & TURNER'S DISSOLVED BONE.

GRIFFITH & TURNER'S RAW BONE.

THE DOCTOR BAILEY CUTTER.
FOR HAY, STRAW AND FODDER. In sizes suited for hand or Power.

Oliver Chilled Plows

Run lighter, are more easily adjusted, and do better work than any other plow.

Malta Shovel Plows, Iron Age Cultivators, Corn Drags, Cahoon Seed Sowers, Planet Seed Drill and Cultivator, Empire Grain Drills, Advance Horse Rake, the Star Horse Rake, the Victor Horse Rake, the Hagerstown Horse Rake, Hay Tedders, Foust's Hay Loader, American Hay Elevator, Double Harpoon Hay Fork, Grain Fans, Philadelphia Lawn Mowers, Corn Shellers, Cider Mills, Farmers' Friend Corn Planters, Keystone Corn Drills, Hay Presses, Hay, Straw and Fodder Cutters, Butter Workers, Stoddard Churns, Davis Swing Churns, Fountain Pump, Cucumber Pumps, Moseley's Cabinet Creamery, Patent Galvanized Steel Fence Wire, cheap, durable and easily put up.

—REPAIRING DONE WITH DISPATCH—
SEND FOR CIRCULARS.

GRIFFITH & TURNER

DEALERS IN

Agricultural Implements, Fertilizers and Seeds,

41 & 43 NORTH PACA STREET,
BALTIMORE, MD.

FOR SALE.
TWO SHORTHORN BULLS.

"RUPERT."—Red; calved June 30, 1880: bred by S. S. Bradford, Esq., Culpepper, Va. By Earl of Belleview; a straight Bates Rose of Sharon, [sired by Earl of Weldon, 3555, S. H. R.; 14175 A. S. H. H. B. Dam Elvina 8th, 4117 Plantagent 8795. Second dam Elvina 3rd, 1800; 11th Duke of Thorndale, 5611. Thire Dam Elvina, 813 Duke of Geneva (19614).] Dam Red Rose 8th, by Taurus 6235. Price $125.

"MARY'S KIRKLEVINGTON PRINCE."—Red and white; calved January 15th, 1883. Bred by E. B. Emory, Centreville, Md., by Kirklevington Lad 29538. Dam Sharon Belle 3rd 6167. Belle Sharon 2nd 37681. Price $150.

AND ONE BULL CALF, ROAN, BRED BY ME. Calved March 6th, 1884, by Kirklevington Lad 29538 Dam Catherine Princess by Emory's Roan Duke 35573. Price $50.

Tunis Mills, Md. OWEN NORRIS.

FOR SALE.
FARM AND DUCKING SHORE.

On Middle River, twelve miles from city, and about 5 miles from Stemmer's run, 80 acres, including 20 acres of good timber—oak, chesnut and maple; improvements fair, soil fertile, water exceptionally good; young orchards of fine fruit. About a mile of shore, and superior fishing and shooting. For further information, apply at THE AMERICAN FARMER OFFICE, 128 West Baltimore Street.

THE COMET
NEW EARLY PEAR. Size, Ripe, latitude 40° 20th July. The earliest and most beautiful pear known. Sold Wholesale in New York at $8 per bushel. Send for Full Description.
Address, J. S. COLLINS,
MOORESTOWN, New Jersey.

2806 Lbs. Wg't
of two OHIO IMPROVED
CHESTER HOGS
Send for description of this famous breed. Also Fowls.
L. B. SILVER, Cleveland, O.

SOUTHDOWNS.

Yearling and 2-year Rams bred from importations from Henry Webb and Lord Walsingham, also fifteen breeding Ewes,

FOR SALE BY

SAM'L J. SHARPLESS,
705 WALNUT STREET,
PHILADELPHIA.

T. S. HUBBARD, FREDONIA, N. Y. HEADQUARTERS. Authorized General Agent.

THE NEW NIAGARA WHITE GRAPE

Now offered for sale to the public without restrictions for the first time. 2 year Vines, $2.00 each. Liberal commission to dealers and the trade. Agents wanted. Outfit Free. All Vines sent out under seal of Niagara White Grape Co. None Genuine Without. Also a large general stock of PRENTISS and other GRAPE VINES, STRAWBERRIES, &c. Address as above.

FAY CURRANT GRAPES

HEADQUARTERS. BEST STOCK IN THE WORLD
SMALL FRUITS AND TREES. LOW TO DEALERS AND PLANTERS. EVERYTHING FIRST-CLASS. FREE CATALOGUES. GEO. S. JOSSELYN, FREDONIA, N. Y.

ESTABLISHED 1839.

JOHN BULLOCK & SON,

MANUFACTURERS OF

PURE BONE DUST AND DISSOLVED PURE RAW BONE,

Store, No. 71 SMITH'S WH'F. Factory, WASHINGTON ROAD.

Also Agents for the Sale of

ROSENDALE, ROUND TOP AND PORTLAND CEMENTS.

TO WHEAT GROWERS!

The undersigned, PIONEER in the manufacture of Fertilizers in this city, and ORIGINATOR in 1858 of the Formulas and processes of manufacture of

"EXCELSIOR" & AMMONIATED PHOSPHATE,

So well and favorably known by the Agricultural public, relying upon his experience and personal reputation hitherto acquired in the uniform excellence of these Fertilizers, as manufactured by him, continues to offer them to the Farmers and Planters of Maryland and Virginia, with the assurance that the high standard quality of each will be maintained as heretofore.

AND

For growing Wheat, it is the universal opinion of the farmers of Maryland and Virginia, after over twenty-six years experience in the use of these FERTILIZERS, that an application of 100 pounds is equal in its effects to 200 pounds of any other Fertilizer or Guano, therefore fully 50 per cent. cheaper.

With my present advantages and superior facilities for manufacturing, I challenge competition with any Fertilizer sold in the United States, in Quality, Mechanical Condition and Price.

By strictly adhering to my Original Formulas, using only the most concentrated materials, and superintending in person their manufacture—as for the past TWENTY-FIVE YEARS,

UNIFORM QUALITY IS GUARANTEED.

Farmers, to secure the ONLY GENUINE EXCELSIOR and PHOSPHATE, should see that every Bag is branded as above, with the ANALYSIS and MY NAME IN RED LETTERS.

J. Q. A. HOLLOWAY.
107 McELDERRY'S WHARF, BALTIMORE, MD

ROSEBANK NURSERIES

GOVANSTOWN, BALTIMORE COUNTY, MARYLAND.

Ornamental and Fruit Trees, Flowering Shrubs, Herbaceous Plants.

WE invite the attention of the public to our select stock of the following: STANDARD AND DWARF PEARS—2, 3 and 4 years. APPLES—Standard and Dwarf. CHERRIES—Standard and Dwarf. APRICOTS, CRAB APPLES, MULBERRIES, GRAPEVINES, of the most popular kinds, together with other small fruits. Our Collections of EVERGREENS, ORNAMENTAL TREES AND SHRUBS are large, and embrace most of the rarest sorts.

☞ CATALOGUES FORWARDED ON APPLICATION. ORDERS BY MAIL PROMPTLY ATTENDED TO. ALL GOODS DELIVERED IN BALTIMORE FREE OF CHARGE.

W. D. BRACKENRIDGE.

LANDRETHS' CENTENNIAL SEED CATALOGUE
1784 1884

"GARDENERS' COMPANION."

PRICE 10 CENTS. The most complete and brilliantly embellished Seed Catalogue ever published, costing fifteen cents. The article on Market Gardening under Glass is worth twenty times the price. This being ONE HUNDREDTH YEAR, we publish this Ornate Guide for Garden and Farm. To all sending us TEN CENTS in stamps, we mail a copy, and on orders for Seed will give credit for that amount. Address

LANDRETH & SONS, Seed Growers, Lock Box, Phila. Pa.

LUMBER.

THOMAS MATTHEWS & SON,

88 N. High St. and Cor. Canton Ave. and Albemarle St., Baltimore.

White Pine and Yellow Pine LUMBER, for Building.

Rough and Dressed Lumber.

HARDWOOD FOR WHEELWRIGHTS AND CABINET-MAKERS.

SHINGLES, LATHS, PALES, Etc., AT LOWEST PRICES.

SPRINGFIELD ENGINE & THRESHER CO.

SPRINGFIELD, O.

The best Traction and Portable Engines, Separators and Horse Powers in the world.

Handsome Illustrated Catalogues sent free.

GEORGE O. STEVENS,

WINDOW SASHES, BLINDS & DOORS

49

LIGHT STREET,

BALTIMORE.

KEEPS IN STOCK AND FURNISHES TO ORDER: Window Sashes, Doors, Blinds, Mouldings, Brackets, Hand Railings, Balusters, Newel Posts, Bracket Shelves, Barge Boards, Window Caps, Door Caps, Pews and Church Work, Blinds, Hinges, Builders' Hardware, Wood Mantels, Window Frames, Door Frames Paints, Oil, Putty, Glass, Lumber, Bricks, Lime, Sash Weights, Sash Cord, Porch Columns, Tree Boxes.

Also, ROYAL LIQUID PAINTS, ready for immediate application. Recommended for Durability, Elegance and Economy. Put up in ¼, ½, 1, 5, 10 and 50 gallon packages.

The Best Work at Lowest Prices.

GEO. F. SLOAN & BROTHER.

LUMBER,

DOORS, SASH, BRICKS, &C.

IN LOTS TO SUIT.

132 LIGHT STREET WHARF,

BALTIMORE.

GILPIN'S VEGETABLE LIVER PILLS

ARE prepared, with great care, from medical plants; are *coated with sugar*, that they may be taken by the smallest child and upon the most delicate stomach; are intended especially to act upon the Liver, thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLDS, JAUNDICE, and all diseases of a bilious origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

OAKLAND, June 22, 1859.—*Dr. Gilpin:* After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say that the combination is certainly perfect, and comprises the only remedies I ever believed were the proper ones to be used in diseases of a bilious origin. I shall take pleasure in recommending them, not only to my patients but the entire medical profession. Yours truly, J. M. WISTAR, M. D.

From one of the leading retail druggists of West Virginia:

WESTON, W. VA., June 18, 1860.—*Messrs. Canby, Gilpin & Co.*—Gents: Please send by express twelve dozen Gilpin's Vegetable Liver Pills. I have the most flattering accounts from all who have used them, and believe the day is not far distant when they will supersede all others. Yours, F. M. CHALFANT.

We could fill several pages with certificates, etc., from prominent men throughout the country, but prefer to let the Pills in the future, as they have in the past, rest entirely on their own merit, knowing that wherever they are known their use will pass down from generation to generation.

GILPIN'S VEGETABLE LIVER PILLS are sold by all respectable druggists and country store keepers throughout the United States and Canadas.

Principal Depot, CANBY, GILPIN & CO., Baltimore.

ESTABLISHED] **A. E. WARNER,** [1811.

MANUFACTURER OF

SILVER WARE AND RICH JEWELRY

English, Swiss and American WATCHES of the Best Makers,

Importer and Dealer in Diamonds, Fine Watches, Silver-Plated Ware, Table Cutlery, &c.

WEDDING PRESENTS,

Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses, Shell Jewelry, &c.
All of which is offered at GREATLY REDUCED PRICES.

No. 135 W. BALTIMORE STREET, near Calvert, Balto.

DAIRY GOODS. CHURNS

We make from the best material Superior Articles of Dairy Goods, that are models of strength and simplicity. Unquestioned proof given of their durability. Sole manufacturers of Curtis' Improved Factory Churn, Mason's Power Butter Worker, Lever Worker, Curtis' Square Box Churn, Rectangular Churn, Cream Vats, Dog Power, etc. "One Family Churn at wholesale where we have no agent." All goods warranted exactly as represented. TWO GOLD AND FOURTEEN SILVER MEDALS awarded for superiority.

CORNISH, CURTIS & GREENE, Fort Atkinson, Wis.

EASTERN SHORE NURSERIES,

DENTON, CAROLINE CO., MD.

PRICE LIST WILL BE MAILED FREE TO ALL APPLICANTS.

A very fine stock of APPLE TREES, of such kinds as are suited to the soil and climate of Maryland and Virginia. Peach Trees, Pear, Cherry, Apricot, Quince and Nectarine Trees. A large and superior lot of Wild Geese and other Plum Trees. An immense stock of Grape-Vines, embracing 40 kinds, at very low prices. Shade and Ornamental Trees. In short, a complete assortment of carefully grown nursery stock, at prices as low as a reliable and good article can be grown.

☞ Send for Price List before purchasing elsewhere.

J. W. KERR, Proprietor.

M. G. ELLZEY, M. D.,

1012 I Street N. W., Washington, D. C.

Breeder of Highly Bred Gentleman's Roadsters and Saddle Horses, Shorthorn Cattle, Southdown Sheep direct from Lord Walsingham's Celebrated Flock, and Purely Bred Berkshire Swine.

I am now taking orders for delivery in August for 2 two-year old Rams, 10 Yearling Rams, and 10 Ram Lambs.

Correspondence invited. PRICES LOW. Some fine Horses now for sale.

Burnside Park Herd.

PRIZE RECORD.

Sweepstake Premium for best herd New Jersey State Fair, 1882.

First Premium for best herd New York State Fair, 1883.

First Premium for best herd Maryland State Fair, 1883, besides many other first premiums for single animals in all the Fairs named.

The herd is headed by the Bull BLACK PRINCE OF LINDEN, 9063, A. J. C. C. H. B. Among the females are the famous cows Princess 2d, 8046, 27 lbs. 10 oz. butter in 7 days, (official test); St. Clementsise 18168, 15 lbs. 12 oz. in 7 days; Khedive Primrose 2238, Oxford Kate 13546, Saragossa 22019, Queen of the Farm 9069, and many other celebrated animals.

S. M. SHOEMAKER,

Baltimore, Md.

Communications in reference to the herd should be addressed to

O. Ricklefsen, Manager, Stevenson P. O., Md.

FARM WANTED.

Wanted to rent, for a term of years, a small farm on the Eastern Shore, in first-class condition, suitable for market garden purposes. Would prefer a place immediately on salt water and convenient to steamboat landing and railroad station. Talbot County or the Eastern Shore Counties of Va. preferred. Address with full particulars, GARDENER,

AMERICAN FARMER OFFICE,
128 W. Baltimore St., Balto.

SEND For description of ATLANTIC Strawberry, the most valuable grown; and new Catalogue of BEST SMALL FRUITS. Free. W. F. BASSETT, *Hammonton, N. J.*

Cut This Out & Return to us with TEN CTS. & you'll get by mail A GOLDEN BOX OF GOODS that will bring you in MORE MONEY, in One Month, than anything else in America. Absolute Certainty. Need no capital. E. Young, 173 Greenwich St. N. York.

WM. FRASER,

(Late Supt. Patterson Park.)

Landscape Gardener & Florist,

277 East Baltimore St., Baltimore.

COUNTRY SEATS Laid Out. GARDENS Planted and Kept. TREES Planted and Pruned, GRADING and SODDING, at lowest rates. PLANS and ESTIMATES furnished. Orders by mail promptly attended to.

SHOPPING.

Shopping of Every Description

Promptly and Economically Done.

References, Information and Circulars given when desired, Address Mrs. A. M. SNOWDEN, No. 38 BOLTON STREET, Baltimore, Md.

KIEFFER'S HYBRID PEAR

THE PEAR FOR THE SOUTH.

FINE TREES In Condition for Shipping. Send for Price List.

H. S. ANDERSON, Cayuga Lake Nurseries

UNION SPRINGS, N. Y. *Established 1865.*

Caution to Farmers & Dealers

For Safety in procuring your HARPOON HORSE HAY FORKS, *select* only those having thereon an imprint of our TRADE MARK, and thereby save infringement fees.

Catalogues giving reliable information furnished free by M'f'gs and Props.,

A. J. NELLIS COMPANY, Pittsburg, Pa.

Also, M'f'gs Nellis' Mounted & Floating Harrows, Ag't'l Steels, O'm't'l Fencing, Road Graders, etc.

"FLOATS" OR PHOSPHATE DUST.

Flour of South Carolina Phosphate

Contains from 55 to 60 per cent. Phosphate Lime, ground to an impalpable powder in the Due Atomizer, which grinds much finer than by any other process known. We are the only establishment in this section using these machines.

Also Ammoniated Super Phosphate. Songston's Cereal and Plant Food, Alkaline Bone Super Phosphate. Tornado Fertilizer. Linden Super Phosphate.

We have on hand for sale

Fine Ground Raw (Animal) Bone. Dissolved Raw (Animal) Bone.
Muriate of Potash. Kainit.

The Maryland Fertilizing and Manufacturing Co.,

No. 4 S. Holliday Street, Baltimore, Md.

SLINGLUFF & CO.

OFFICE, 157 W. Fayette St. } BALTIMORE. { WORKS, Foot Leadenhall St.

Manufacturers and Manipulators of

PHOSPHATES.

We are now offering to the trade the following *WELL-KNOWN BRANDS OF GOODS*, which we guarantee fully up to the standard:

SLINGLUFF'S DISSOLVED GROUND BONE,
Containing 3 per cent. of Ammonia.

SLINGLUFF'S DISSOLVED SOUTH AMERICAN BONE ASH,
Containing 40 to 44 per cent. Soluble Bone Phosphate.

SLINGLUFF'S DISSOLVED SOUTH CAROLINA PHOSPHATE,
Containing 30 to 32 per cent. Soluble Bone Phosphate.

To meet the demand for a High-Grade Fertiliser, we are offering

SLINGLUFF'S NATIVE SUPER-PHOSPHATE,
Prepared entirely from Animal Bone, highly ammoniated. Also,

SLINGLUFF'S No. 1 AMMONIATED SUPER-PHOSPHATE.
This we can confidently recommend as one of the best fertilizers sold in the market at the price.

FOR SALE.

FIFTY Southdown Ewe Lambs and a few Bucks, Price $10 a piece
FRANCIS MORRIS,
Oakland Mills, Howard Co., Md.

TRADE-MARKS, PRINTS, LABELS. **PATENTS.** COPY-RIGHTS, DESIGNS Re-Issues
Send description of your Invention. L. BINGHAM, Patent Lawyer and Solicitor Washington, D. C.

University of the State of New York.
AMERICAN VETERINARY COLLEGE,
141 West 54th Street, New York City.
The Regular Course of Lectures commences in October each year. Circular and information can be had on application to A. LIAUTARD, M. D. V. S.,
Dean of the Faculty.

W. H. Martenet, D. V. S.,
GRADUATE OF THE
AMERICAN VETERINARY COLLEGE.
OFFICES: Asquith & Monument Sts., 152 Saratoga Streets; Residence, Hoffman St., East of Gay, Baltimore, Md.
Telephone at Residence.

KNABE
PIANOFORTES.
UNEQUALLED IN
Tone, Touch, Workmanship and Durability.
WILLIAM KNABE & CO.
Nos. 204 and 206 West Baltimore Street, Baltimore. No. 112 Fifth Avenue, N. Y.

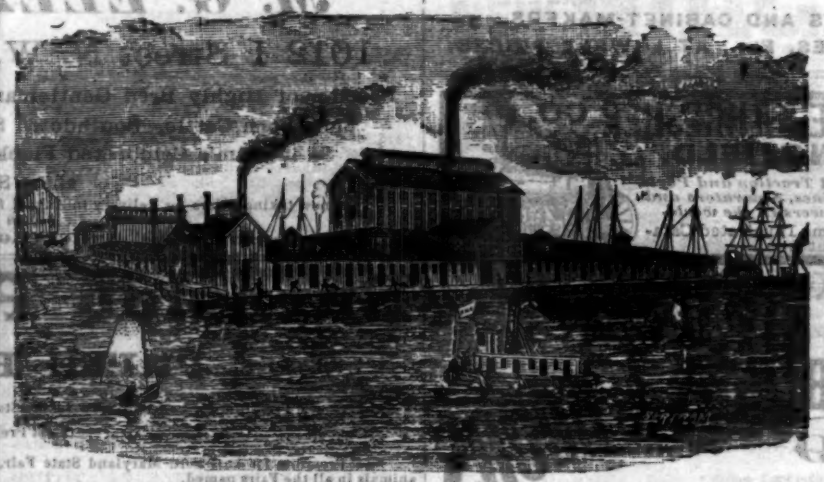
Virginia Lands.

Upper James Real Estate Agency,
By WILLIAM HOLMAN,
CARTERSVILLE, Va.,
WHO offers for sale upwards of 12,000 acres of land lying in one of the most desirable regions of Eastern Virginia. Catalogues sent on application.

The Rasin Fertilizer Company,

PROPRIETORS OF THE

"SEA-WALL GUANO WORKS."



SITUATED ON THE PATAPSCO RIVER, AT SEAWALL, ANNE ARUNDEL CO.

The most extensive and permanent WORKS in the United States, and the whole under the direct supervision of Mr. B. W. L. RASIN, the General Manager of the Company, whose thorough knowledge and experience is a guarantee of the quality of their FERTILIZERS.

Large Stocks on hand and ready for delivery. Your orders Solicited.

The Rasin Fertilizer Company,

20 & 22 South Street, Baltimore.

Peruvian Guano.

HIGH GRADE PERUVIAN GUANO

Direct from PABELLON DE PICA, the richest deposit of Peru, containing 9½ to 10 per cent. of Ammonia, also a full supply from LOBOS' deposits, containing 5½ to 6 per cent. of Ammonia, which I offer for sale direct from Guano storehouses, Waters' Wharf.

J. Q. A. HOLLOWAY,
107 McKlderry's Wharf,
BALTIMORE, MD.

FOUTZ'S
HORSE AND CATTLE POWDERS

No Horse will die of Colic, Bots or Lung Fever, if Foutz's Powders are used in time.
Foutz's Powders will cure and prevent Hog Cholera.
Foutz's Powders will prevent Gapes in Fowls.
Foutz's Powders will increase the quantity of milk and cream twenty per cent., and make the butter firm and sweet.
Foutz's Powders will cure or prevent almost every Diseases to which Horses and Cattle are subject.
FOUTZ'S POWDERS WILL GIVE SATISFACTION.
Sold everywhere.
DAVID E. FOUTZ, Proprietor,
BALTIMORE, MD.

WM. STUART SYMINGTON. THOS. A. SYMINGTON.

Symington Bros. & Co.,

Office, N.E. Cor. Holliday St. & Exchange Place. Works, Locust Point, Baltimore

Manufacturers of the

ORIOLE FERTILIZERS,

☞ Each grade of these fertilizers is made under a different and distinct formula, and each contains what is most needed by the particular soil for which it is intended. We guarantee our goods exactly as represented.

SYMINGTON BROS. & CO., Manufacturing Chemists.

R. J. BAKER. ESTABLISHED 1837. R. J. HOLLINGSWORTH

HIGH GRADE FERTILIZERS.

SULPHATE OF AMMONIA. PURE NITRATE SODA.

R. J. BAKER & CO.

MANUFACTURERS AND DEALERS IN

CHEMICALS,

Ammoniated Super-Phosphate for all Crops. Pure Dissolved Raw Bone. Pure Fine Ground Raw Bone. Stag Super-Phosphate of Lime for Tobacco.

HIGH GRADE IMPORTED BIRD GUANO $25 PER TON.
BIRD GUANO AND POTASH FOR CORN $25 PER TON.

FACTORY AT LOCUST POINT.

Office, 36 & 38 S. Charles St., Baltimore, Md.

ENTERED AT POSTOFFICE, BALTIMORE, AS SECOND-CLASS MATTER.